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THE MENTOR

FEBRUARY, 1921

GREECE OLD AND NEW

THE POWER OF THE NEAR EAST IN HISTORY AND TODAY

By ARISTIDES PHOUTRIDES

Greek Scholar and Author

BEAUTIFUL GRAVURE PICTURES, reproductions of exclusive photographs made by order of the Greek Government, "The Isle of Death," "Monasteries in the Air," the Acropolis of Athens, the temples and cities of Ancient Greece and relics of the childhood of man.

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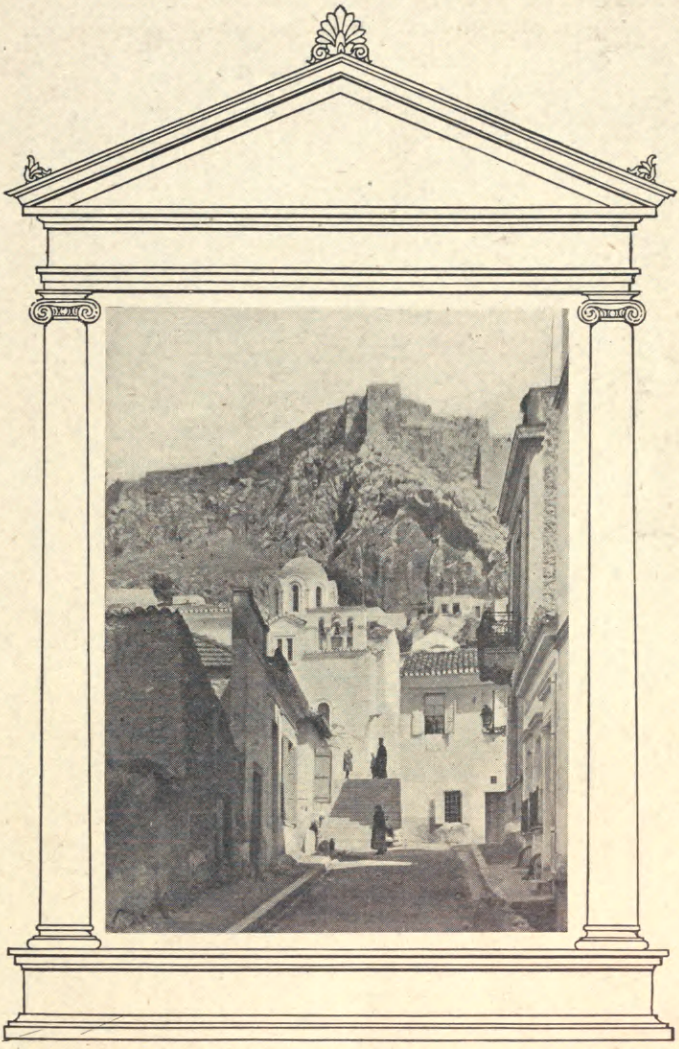

GREECE OLD AND NEW

THE MENTOR

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THE RUINED CITADEL OF ANCIENT CORINTH

THE SPRING OF PEIRENE WHICH GUSHED FORTH AT A STROKE OF THE HOOF OF PEGASUS IS STILL FLOWING ON THE TOP OF THE HILL. FOR YEARS THE AMERICAN SCHOOL OF ATHENS HAS BEEN CONDUCTING EXCAVATIONS ON THE SITE OF OLD CORINTH

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THE MENTOR

VOL. 9 SERIAL NUMBER 216 No. 1

GREECE OLD AND NEW

By ARISTIDES PHOUTRIDES

Greek Scholar, Author and Traveler

COME with me to a mountain top of Greece where you will be able to gaze with eager eye on wave and hill. I might let you follow some Spartan shepherd up Taygetus from where you could see the amber valleys and lilac mountains of Peloponnesus laugh in the embraces of an amethyst sea. I might climb with you the magnificent buttresses of Parnassus, the mountain of the Nine Fair Sisters of Song and the palace of Apollo, God of brilliant sunlight. I might even ascend the Great Olympus and open to you the sacred path to the blessed peaks where, as they say, is "the seat of the Gods that standeth fast forever."

PERICLES
STATESMAN AND PATRON OF THE ARTS IN THE GOLDEN AGE OF GREECE (495-429 B. C.)

I have seen these places and I know the way. But I prefer to lead you to the best lookout in Greece—the top of the Holy Mountain of her people, which is known as Mt. Athos. You will not be allowed to take any cows, or hens, or she-goats or any other female animals with you; and women are strictly forbidden to tread on this holy ground, which is peopled only by pious ascetic men. Only the birds of the air are able to break the rule of the hermits. They build their nests on every tree and bush, and sing of life and love to the five thousand or more pietists, the whole year round. Like the birds, we will alight on the spot where I stood one beautiful May morning six years ago, at the highest point of Mt. Athos.

SUMMIT OF MT. ATHOS

At that time I had climbed the mountain in splendid moonlight. I had started from a small hermitage

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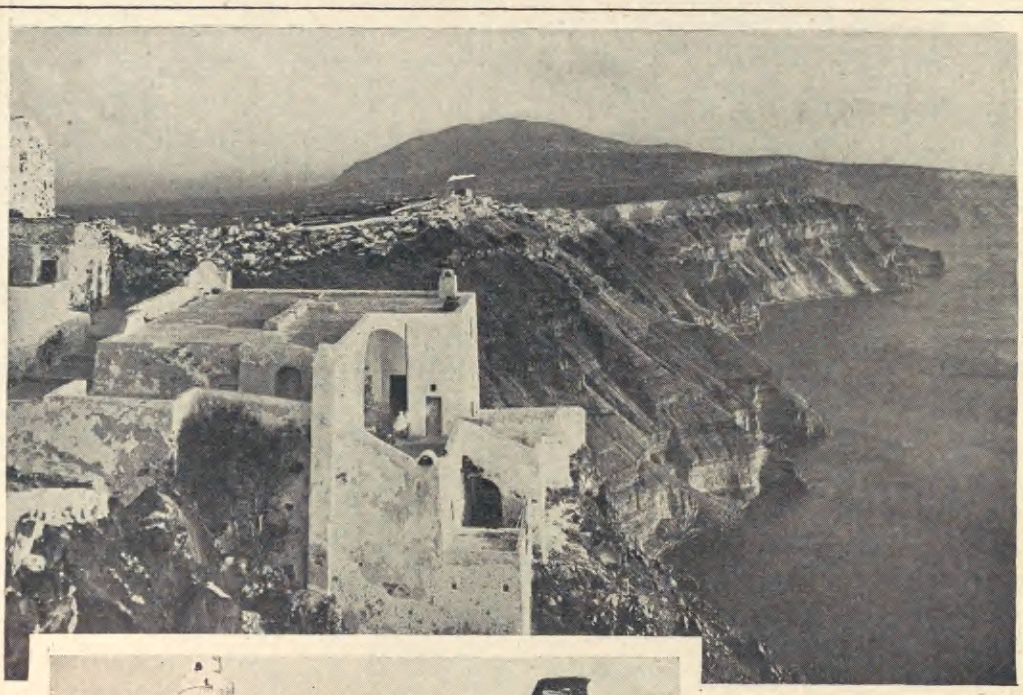
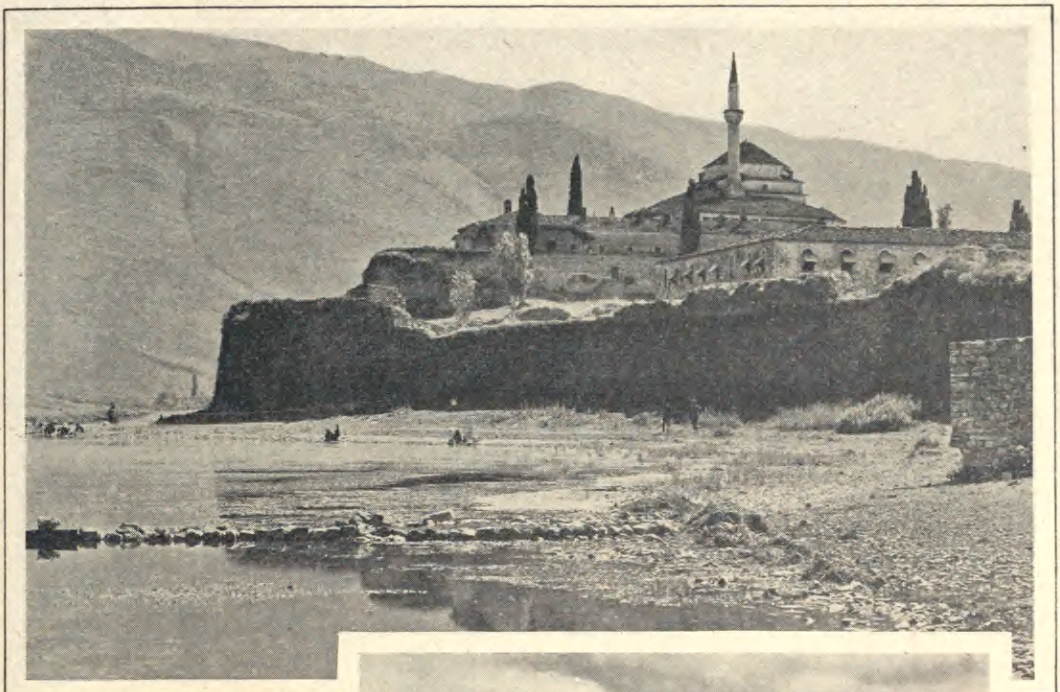


SANTORIN, ISLAND OF THERA

RUINS OF THE CHURCH OF ST. DEMETRIUS, SALONIKI

at the foot of the mountain at 1:30 A. M. with a number of pilgrim priests and monks, who were to celebrate mass in the little shrine of the Transfiguration on the top. I shall never forget that mystic ascent. The moon was shining through the weather-beaten oaks and firs which shook and trembled at the blasts of a furious northwester; and, in the shadow-dappled moonlight, the black gowns of the priests flapped and spread like wings striving to lift their burden of earth skyward. Down below we could get glimpses of the sea, sprinkled with silver and gold petals, over which veil after veil of cloud and wind passed like great rippling shadows fleeting southward and carrying the roar of the waves far beyond our hearing. Above us only the brightest stars were seen, pale and humble in the silver pastures of the moon.

Then, as dawn leaped over the eastern sea in a flurry of saffron and crimson and pink, clouds, all colors of the rainbow, were driven like illumined ships with sweeping velocity



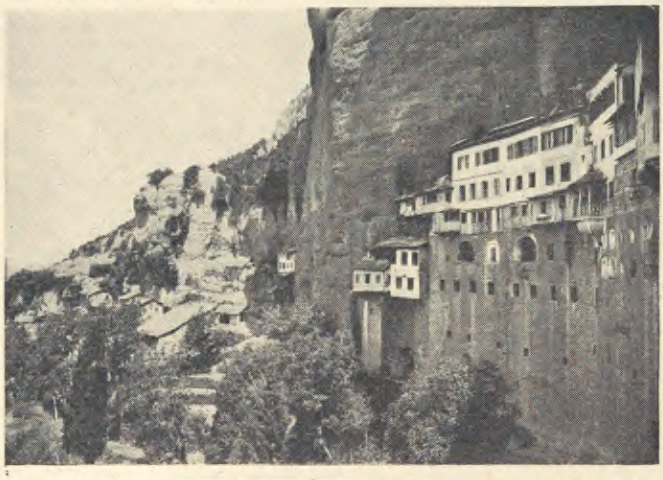
ON LAKE JANINA, EPIRUS

ARGOS AND ITS ANCIENT FORTRESS

across the sky, and about us; the earth donned a glorious garment studded with thousands of flowers that danced and laughed at the whistle of the wind, and filled the air with fragrance. In the distance there were delicately drawn silhouettes of pine-groves against brilliant curtains of colored light, and at last, the glorious head of Athos eighteen hundred and thirty-five meters above the sea, where he watched day after day the sun ride over him from the rosy fields of the East to the farthermost ebony shadows of the west.

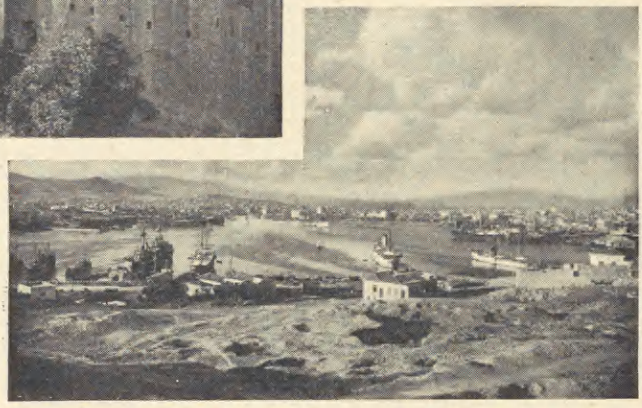
A view of Greece, indeed, unsurpassed by any Grecian vista. Wherever I turned, memories rose like hosts of sunlit phantoms across the gulf of three thousand years, dancing on every wave and singing on every hill.

The Aegean Sea glistened in the sun. It was a land-loving sea, for it wove garlands of sparkling blue about a legion of islands, and cut bay after bay and gulf after gulf along the coasts, till the mainland looked like



A MONASTERY BUILT INTO ROCK

THERE ARE MANY SUCH RETREATS IN GREECE AND ITS ISLANDS



LOOKING ACROSS THE HARBOR OF PIRAEUS

THE PORT OF ATHENS AND ONE OF THE MOST PROSPEROUS CITIES OF THE EASTERN MEDITERRANEAN

tatters of lovely raiment floating on a lovelier sea. And what islands and what coasts! In the Far East there was Asia Minor and the plain of Troy where Achilles and Hector fell to make Homer sing. To the northeast, under an enhancing veil of shining mist, there were chains of blue hills—Thrace, the land of mystic cults, where Orpheus with his harmonies tamed the wild beasts of the jungle and made the trees dance; and where the youthful God of Wine, Dionysus, first landed from the east, bringing with him the divine fruit of the grape-vine and the double song of sorrow and joy which developed into the drama and filled the world with the rituals of the temple and the lessons of the stage. To the north and northwest there rose range after range, the wild and purple-crested mountains of Macedonia, birthplace of Alexander and a constant battle-ground for Grecian freedom. Then, to the west, a resplendent palace of all the colors of the amethyst was set in fields and tresses of white snow against a limpid sky, a mountain with many peaks and buttresses, laved by the sea and crowned with pearl clouds, Mt. Olympus, the fit abode of immortals. Farther southwest the summits of Ossa and Pelion, and hosts of other mountain lords, spoke of the glories of the vail of Tempe and of Thermopylae.

To the south, like brilliant diamonds floating on a magic sea, there were the islands of Thasos, Samothrace, Imbros, Lemnos, Lesbos and the lovely garland of the Sporades. And at my feet the waters embraced the peninsula of Chaleidice, which leaped like a huge trident from the mainland into the sea, and formed a magnificent balcony for mortals to come and gaze on immortal sights. The peninsula of

THESE PEASANTS ARE GATHERING OLIVES IN THE ISLAND OF CRETE

A PRIEST AND HIS PARISHIONERS ON THEIR WAY TO CHURCH IN THE GREEK HIGHLANDS

Mt. Athos is the easternmost ballustrade of this balcony and it rises gradually from northwest to southeast until it reached the highest point and makes a precipitous wall over the sea to the south. All along its slopes, on its lower hills, picturesque monasteries and hermitages nestle snugly among rocks or in the midst of cypresses, walnut trees, firs, oaks, pines, and fig-trees. I stood on the very tip of this ballustrade, its southeastern corner, a mountain springing from the midst of the sea and casting its shadow westward across alternating tongues of brown land and purple water.

THE PEOPLE

Three thousand years have made the Aegean a Greek Sea. The Greek people who since the dawn of history have lived on the lands encircling this sea have clung to their inheritance with tenacious loyalty against all invasions. Their past is a continuous struggle for freedom. Everybody has heard of Marathon, Salamis and Thermopylae; but few know of the subsequent storms that swept over Greece from north and south and east and west, threatening to extinguish its inheritance and its life. Yet the Greek people lived through the centuries of continuous struggle; they assimilated the Roman conquerors and made the Eastern Empire a Greek Empire with Constantinople as its capital which, for a thousand years after the fall of Rome, stood impregnable against the northern and eastern barbarians. Then the Turks came and they swept like a pestilence over the whole land. Constantinople fell in 1453 and the Greeks underwent, for four centuries, one of the most cruel tyrannies in the history of the world. People had begun to think that Greece was a thing of the past. They could only see a destitute race

SMYRNA
ON A
SUNNY DAY

of slaves tormented and suppressed by ruthless tyrants who thrived on rapine and blood.

Yet there was a living soul among the ruins, and the slave in chains was only waiting for the day when he would rise to claim his own inheritance. The dream of freedom was

THE AQUEDUCT AT SMYRNA

fostered in the home and in the church. Under the veil of religion, national history and traditions were handed from generation to generation, linking the toiling slaves with the heroes of Thermopylae. In village festivals, in innocent dances and songs, and above all, in fairy tales

THERE ARE MANY HARBORS LIKE THIS— AMORGAS, KATAPOLIS

WHERE ULYSSES WAS SHIPWRECKED, MODERN PALARASTRITSA, ISLAND OF CORFU

VILLAGE LIFE IN ARCADIA

told by the fireside, the fire of patriotism was passed by the mother to her children just as the ancient Spartan women handed to their warriors their shields with the command that they should come back with honor or die. I will tell you one of these apparently innocent stories which, through four hundred years, murmured like impotent waves about the rock of tyranny. According to history, the last of the Byzantine emperors, Constantine XI, fell by an unknown hand while he was defending Constantinople against the final attack of the Turks, May 29, 1453. After a long siege the city was taken by the enemy. The Greek people continued to believe that Constantine was living for the great day of delivery.

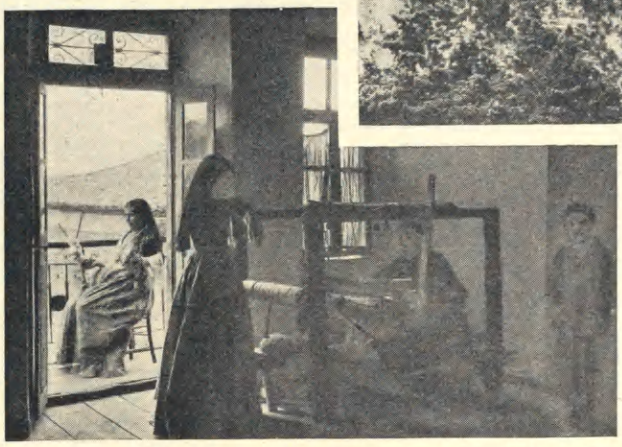
A MOTHER'S TALE

I remember distinctly the hour when my mother told this story to us—a group of children gathered about the fire one winter night. My native island was still under the Turks, but, as far as I can remember, never did any of the people among whom I grew up doubt that some day we would be free. So, when mother spoke, we were all alive to the significance of the tale.

"My children," she said, "when the hour came that the city—Constanti-

THROUGH THIS MYSTERIOUS VALE FLOWS THE SACRED RIVER STYX

THE ANCIENT ARTS OF SPINNING AND WEAVING ARE STILL PRACTICED IN GREEK COTTAGES



IN THE FERTILE FIELDS OF THESSALY

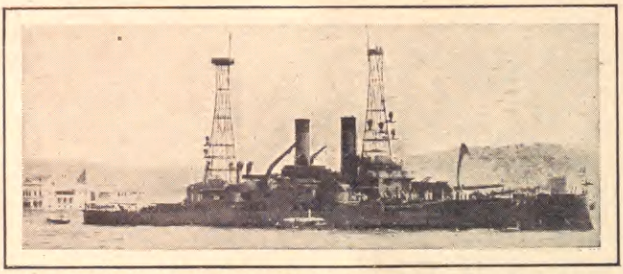
nople—should fall into the hands of the Turks, and the Turks entered it, word was sent to the King and he quickly mounted his horse and rushed to the place to push them back. There was a great multitude of armed men, all Turks. Thousands surrounded him and he struck and killed many with his sword. Then his horse was slain and the King fell. An Arab lifted his sword to strike him, but an angel of the Lord seized the King and led him into a cave deep below the walls of the city near the Golden Gate. There, changed to marble, abides the King and waits for the hour when the angel shall come to wake him. The Turks know, but they cannot find the cave where the King is. For this reason they have built in the gate through which they know the King must enter to take the city from them. When it is the will of God, the angel will descend into the cave, and will give life to the marble, and will hand to the king the sword which he had in the battle. And the King will rise, and will enter the city through the Golden Gate, and will lead his armies against the Turks, and will chase them as far east as the Red Apple Tree. And there will be such great slaughter that the cattle will swim in blood over the fields."

THE DANCE — THEN AND NOW

ANCIENT GREEKS DANCING, AS SHOWN BY A TEMPLE FRIEZE, AND MODERN GREEKS IN A PEASANT FROLIC

THE WAVE OF FREEDOM

This was the spirit that compelled the Greeks to rise against their tyrants in many unsuccessful revolutions until 1821 when the War of Independence broke out, which lasted for nearly ten years before the southern corner and a few of the islands could be liberated—a heap of ruins and devastated fields, with about seven hundred and fifty thousand inhabitants, uneducated and destitute, clothed in rags, hardened by the agonies of a long struggle against unprincipled barbarians, and ignorant of the works of peace. They were to constitute a free state amidst smoke and ashes and to start their independent life with a colossal responsibility on their shoulders, for the fate of their brothers in Thessaly, Epirus, Macedonia, Thrace and Asia Minor who had been left to the mercy of the Turks. But the soul of freedom lived and the last ninety years—which form the entire life of liberated Greece—are a period of remarkable development and achievement. The wave of freedom moved from Athens northward and eastward. First Thessaly and a slice of Epirus joined their motherland in 1881. Then came the Balkan Wars of 1912 which led to the liberation of the greater part of Epirus and Macedonia; and, finally the Great War, which has brought to Greece Thrace, and the majority of her children in Asia Minor, by the creation of an autonomous territory including a large part of Smyrna, under Greek administration. This is the 467th year after the fall of Constantinople. The dream of freedom had to go through a long trial, but it lived because its roots were deep in the hearts of the people and were fed with the memories of three thousand years. At last the Greek people have reached the fulfillment of this dream and they are again one united nation conscious of its past and master of its future.



A GREEK BATTLESHIP IN THE HARBOR OF SMYRNA
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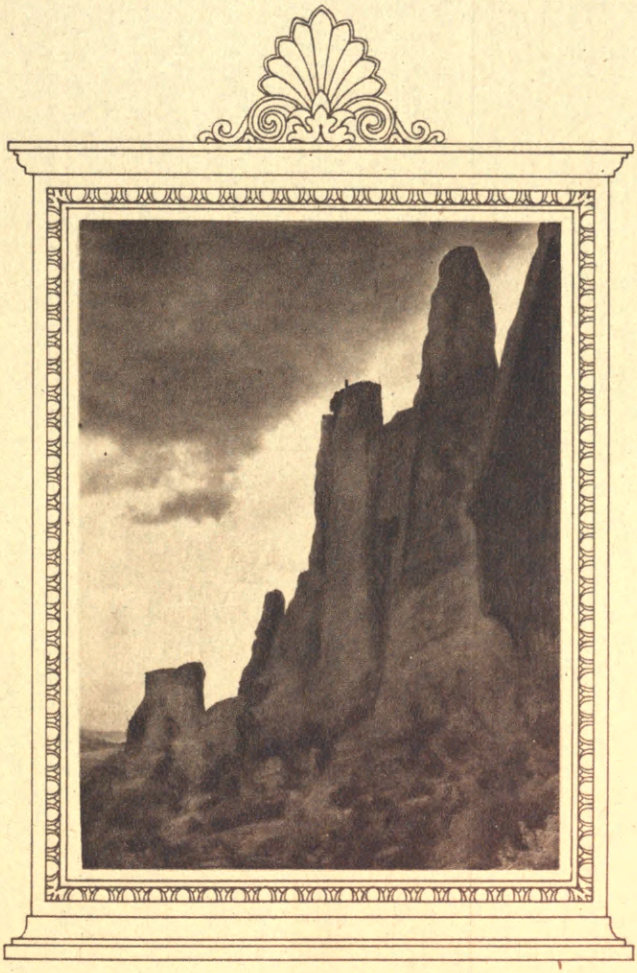


ISLANDS IN THE AIR

FIFTEENTH CENTURY PRIESTS AND PATRIOTS KNEW WELL THE VALUE OF AERIAL DEFENSES. THESSALY IS DOTTED WITH MONASTERIES, LIKE THE ONE ABOVE, PERCHED ON THE CRESTS OF PRECIPITOUS CLIFFS

THE ORIGINAL GARDEN OF THE GODS

MT. OLYMPUS, WHERE, THE ANCIENT GREEKS BELIEVED, THE GODS LIVED

MONASTERIES IN THE CLOUDS

METECRA, ONE OF THE FORTIFIED RETREATS ON THE HIGH ROCKS OF THESSALY, BUILT BY THE GREEK MONKS IN THE FIFTEENTH CENTURY, WHEN THE TURKS OVERRAN THE LAND

GREECE TODAY

SHEPHERDESS AND FLOCK IN AN OLIVE GROVE ON THE ISLE OF CORFU

ONCE A HERO'S KINGDOM

THE SHORES OF ITHACA, WHERE THE ANCIENT GREEKS LOCATED THE KINGDOM OF ULYSSES, THE MYTHICAL NATIONAL HERO WHOSE ADVENTURES WERE THE SUBJECT OF THE WORLD'S GREAT EPIC POEM, THE ODYSSEY

WHERE THE SEA GOD WAS WORSHIPED

CAPE SOUNION, AT THE EXTREME END OF THE GRECIAN MAINLAND. HERE POSEIDON, GOD OF THE SEA, WAS WORSHIPED IN A TEMPLE BUILT IN THE EARLY DAYS, THE RUINS OF WHICH STILL STAND

THE ACROPOLIS FROM THE WEST

THE ACROPOLIS AT SUNSET

ONE OF THE FIGUR
ERECTHEUM,

THE CROWN OF ATHENS—

Wars, weather and the assaults of vandals, since the birth of Christ, have failed to dim altogether the glories of the Acropolis at Athens; its buildings stand today the model for architects. Acropolis means "High Ground." Most of the cities

ATIDE
ORTING THE ROOF OF THE
E OF THE ACROPOLIS

THE PARTHENON, TEMPLE OF ATHENA, BUILT 447 B. C.

THE ACROPOLIS FROM THE SOUTH

of the ancient world were built around an acropolis which was fortress, community center, and religious ground in one. The Acropolis at Athens was the most beautiful and extensive in Greece. In the early '80's, three archaeologists uncovered the Acropolis, the most complete work of its kind recorded thus far by scientists. Relics of great scientific value were found.

WHERE "VENUS DE MILO" WAS FOUND

THE MONEY MART OF ANCIENT GREECE

MOUNTAINS OF LIGHT

LIAKOURA OR "RANGE OF LIGHT" FROM ACROSS THE GULF OF CORINTH. MT. PARNASSUS, AS IT IS KNOWN TO THE WESTERN WORLD, WAS HELD BY THE ANCIENT GREEKS TO BE THE HOME OF APOLLO, THE SUN GOD AND THE NINE MUSES, GODDESSES OF THE ARTS

THE CITY WHERE ST. PAUL PREACHED

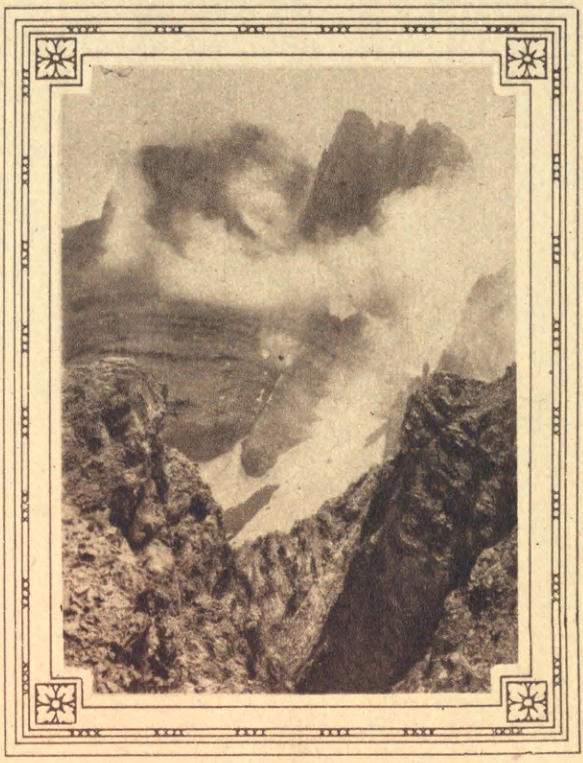
A VIEW OF SALONIKI, ONCE AGAIN PART OF GREECE. THE CHURCH OF ST. GEORGE, IN THE BACKGROUND, IS THE OLDEST CHRISTIAN BUILDING IN THE CITY. IT WAS USED BY THE TURKS AS A MOSQUE UNTIL THE RESTORATION OF THE CITY TO THE GREEKS AFTER THE WORLD WAR.

ONCE THE WONDER OF THE CIVILIZED WORLD

ALL THAT REMAINS OF THE PALACE OF THE KING OF CNOSSOS, THE ANCIENT CAPITAL OF AN ISLAND EMPIRE WHICH SPREAD OVER THE AEGEAN SEA IN 2400 B. C.

THE ISLE OF DEATH

PONTIKONESI, OR "MOUSE ISLAND," THE GREEKS CALL THE FAMILIAR ISLAND WITH THE CYPRESS TREES. IT LIES AT THE MOUTH OF THE MAIN HARBOR OF THE ISLAND OF CORFU AND IS FAMILIAR BECAUSE IT WAS THE INSPIRATION FOR ARNOLD BOECKLIN'S WELL-KNOWN PICTURE, "THE ISLE OF DEATH"



VEILED FROM THE EYES OF MORTALS

MISTS AND SNOW OBSCURE THE SUMMIT OF MT. OLYMPUS, THE HOME OF THE GODS, ACCORDING TO THE ANCIENT GREEK MYTHS

THE STORY OF ATHENS

WHEN King Otto, in 1834, decided to transfer the capital of New Greece from Nauplia to Athens, he could not find a comfortable building to live in. Long years of Turkish misrule had reduced the glorious city to a village. Today the city numbers more than two hundred thousand inhabitants and her buildings, with their marble façades and decorations, give an appearance of dignified beauty worthy of her great history.

Athene, goddess of arts, knowledge, sciences and righteous war is the patron of the capital of the kingdom. The city is situated about halfway between the Saronic Gulf and the harbor of Piraeus —the port of Athens—four and a half miles distant. Modern Athens lies mainly between the north side of the Acropolis and the hill of Lycabettus to the northeast. The streets of Aeolus and Hermes run from north to south and from east to west and, crossing each other at right angles at the center of the city, divide it into four parts.

THE NATIONAL MUSEUM, ATHENS
BUILT LARGELY BY THE MUNIFICENCE OF A GREEK MERCHANT

The site of ancient Athens, at the base of the Acropolis, is interesting for its crooked old streets and brooding houses. Outside this inner core of the city is the Neapolis, or new city. The two most important public squares are the "Constitution" in front of the Palace, surrounded by the best hotels of the city, and the "Concord" near the Piraeus station. Stadium Street runs between the two squares. Towards the cool of the day the Athenians throng the open spaces, or sit at the numerous small tables which fill the sidewalks outside the coffee-houses. Here, over the fragrant cups, they discuss the news of the day, from politics to romance.

In the modern quarter are the chief offices of the Government and city, and the buildings of the National University. Nearly three thousand students are enrolled in its various departments. One of the most interesting institutions in the city is the American School of Classical Studies, supported by American universities and societies devoted to research.

There is a lovely promenade past the palace, under the pepper trees of Queen Amalia Street, to the beautiful park that surrounds the Zappeion, or Exhibition Hall. This is a place especially famed for its sunset view. At the dying of the day, splendid colors play a symphony for the eyes, from the violet slopes of Mount Hymettus to the blue silver of the sea. High above, the rose-colored Acropolis raises its marble songs of the Erechtheum and of the Parthenon into a sky drunk with gold and crimson and blue. Nearby, the stream-bed of Illissus winds toward the sea, past the group of columns marking the site of the temple of Zeus, the god of gods. On such a spot a traveler might, in Milton's words:

"behold
Where on the Aegean shore a city stands
Built nobly; pure the air, and light the soil,
Athens, the Eye of Greece, Mother of Art
And Eloquence."

THE BRIDGE OF ARTA

THE bridge of eight arches over the river of Arta, the ancient Arachthus, dates as far back as the Roman period. It has become famous in popular legends and songs that have spread far and wide, not only among the Greeks but also among the Albanians, Rumanians, Serbians and Bulgarians.

According to one song, "forty masters and sixty apprentices were trying to lay the foundations of a bridge over Arta's river. But what they built in day time was swept away in the evening and they were mourning over their lost efforts when a bird passing by spoke and said:

"With human sacrifice alone a bridge will stand;
Offer no orphan, stranger or a passerby,
But the first master's wife. the beautiful and young,
Who comes late morning and in early afternoon."

The first master heard this and was very sad. He sent his fair mate a message with a nightingale "late to change and late to dress and late to come in the afternoon and late to cross the bridge of Arta." But the bird delivered a wrong message and told the master's wife "quick to change and quick to dress and quick to come in the afternoon and quick to cross the bridge of Arta."—all of which she did.

The beautiful wife came to the bridge where the masters and their apprentices waited for her:

"Health to you, masters, and to you, their men; but tell me what makes your first master look so sad?"

"He lost his wedding ring that fell from the first arch, and there is none who would go in to look for it."

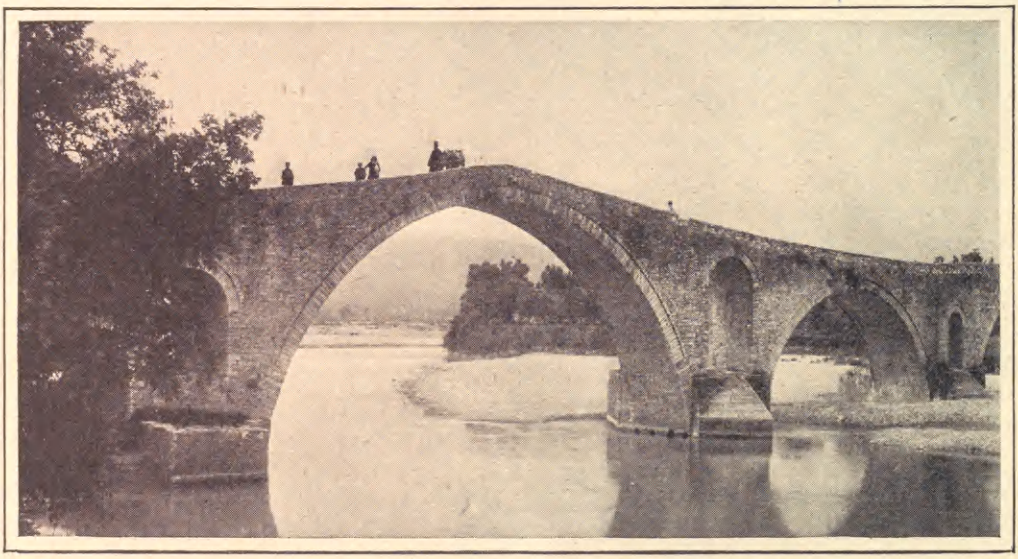
"Then, master mine, be of good cheer, for I will go into the stream and find your wedding ring."

They lowered her into the river with a chain and there she searched in vain. She called on the men to pull her back but in answer the men stoned her to death. The fair victim was even too good to curse them. First she said:

"Oh may the bridge shake like the leaves of walnut trees; and all who cross it fall from it like leaves."

But then she thought of her brother in the foreign lands who might return the same way and she changed her curse into a blessing:

"Oh may the bridge shake only when the mountains shake. And those who cross it fall only when the wild birds fall."



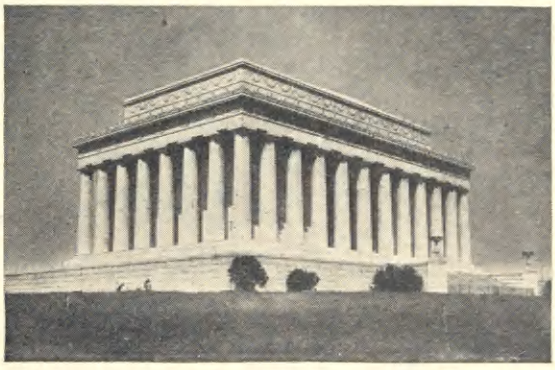
FAMOUS IN SONG AND STORY; THE ANCIENT BRIDGE OVER THE RIVER ARTA

WHAT WE OWE TO GREECE

THE Greeks first taught the world to adore beauty. They created Art. They idealized common things—"spiritualized the earth." Most of all, we feel Greek influence in the decoration of objects that combine the uses of life with an appreciation of grace and good looks.

"First comes health," says an old Greek proverb, "second personal beauty, then wealth honestly come by." Aristotle set wisdom above all else, but believed no man could be happy or do his best if he was surrounded by ugliness.

The artists of ancient Greece were the first to interpret the emotions and deeds of brave men, the charm of fair women, the skill of runners and wrestlers—the joy of life and the inspiration of lofty thoughts. Always they extolled the noble, never the base or morbid. Praxiteles and Phidias were the foremost sculptors of Greece. From them our modern artists learn harmony in design, and perfection of limb and line.



Designed by Henry Bacon

THE LINCOLN MEMORIAL, WASHINGTON, D. C.
A NOTABLE PRESENT-DAY EXAMPLE OF GREEK INFLUENCE IN ARCHITECTURAL DESIGN

The portrayal of allegorical subjects—Justice, Law, Humanity, Charity,—a specialty of Greek painters, affected early Italian schools, and, indirectly, the best modern schools. The popular painters, Sir Frederick Leighton and Alma-Tadema, acknowledged their debt to Greek life and legend. Leighton, painter of the well-known pictures, "Tears," "Greek Girls Playing Ball," "Psyche," and "The Race," once said to a friend that all he was as an artist he owed to the study of Greek sculpture and literature. No painter or sculptor with respect for his craft omits to furnish his studio with casts of Greek statuary. Art schools and museums exhibit Greek figures, busts and architectural models, as examples of classic elegance and symmetry.

There is scarcely a city in Europe or America but boasts a public building,—a library, railway station, church, stadium, post office—that reflects the strength and simplicity of Greek architecture. The typical Greek temple and outdoor theater are models for similar structures the world over. The recently completed memorial to Lincoln in Washington is a most inspiring example of the use present-day builders have made of the Greek colonnade, frieze and windowless hall. It was the Greeks that gave us the domed or circular edifice that rises above the tombs of illustrious dead, for instance, the Pantheon and the Invalides (Tomb of Napoleon), Paris, the circular mausoleum erected by Queen Victoria for her consort, near Windsor Castle, and Grant's Tomb, New York.

In "Paradise Lost" we plainly see the influence of Homer's "Iliad" and "Odyssey," and other Greek epics. The mantle of Milton, the master, has fallen on all English-writing poets. A Greek poet furnished Goethe with the opening scene of "Faust." To Callimachus, a Greek author of renown, is attributed the first love story of the modern type, all about a poor youth and a beauteous maiden, ambitious parents, and a rich rival. When Shakespeare read Plutarch's "Lives" he resolved to take these biographies for characters in his historical plays. In "Antony and Cleopatra" he gives us straight Plutarch in play form.

All Greek plays were recited in musical accents. It was in the Greek theater that Wagner found the idea and the form from which he developed his great music dramas. "The Greeks were the first people to be free in intellect, free in art, and free in politics. It is the fortune of ancient Greece to have thought and wrought for the world.

—Clement King

THE FIRST MARATHON RUNNER

SOME time ago one of our readers asked, "Who was Pheidippides?" and we answered in the Service Page of last month's Mentor, by saying that he was a sort of "Paul Revere of ancient Greece." There was much more that we could have told had space permitted. As a matter of fact, if all that we read about Pheidippides be true, we would set him high among the young heroes of ancient times—place a laurel wreath upon his brow, and hail him not only as the Athenian Paul Revere, but also the first Marathon Runner. Now that we have the space, let us also have the story in full, as we get it from history, legend—and the poet, Browning. It is a story that has to be picked up in parts and pieced together.

To begin with, we are not sure about the young athlete's name. The Greek historian, Herodotus, who was the first to tell us about Pheidippides, also called him Philippides. There was no doubt, however, in the historian's mind about the race that Pheidippides ran. He "carried the message to Sparta"—and made record time doing it.

It was a day of dire need for Athens. Persia had threatened Greece, and was on her very shores. When the Greek generals heard that their old enemy, the dreaded Persian, had encamped on the plain of Marathon, they determined to send a courier to Sparta to beg for aid. There was no time to spare, for Sparta was nearly 140 miles distant from Athens. Pheidippides, a young Athenean, and, by birth and practice, a trained "express runner," was chosen for the task. At the order of Miltiades, the great Greek general, Pheidippides set off on the instant, and reached Sparta on the very next day after leaving Athens. On arriving at Sparta, he went before the rulers and besought them to hasten aid to Athens. The Spartans said that they would like to help, but they "could not break the law that forbade their marching into battle except under the full moon." Beneath this veil of superstition, however, there lay a sterner reason for Sparta's withholding assistance—a long-felt, deep-seated jealousy of Athens. No promise was forthcoming, so Pheidippides had to make his homeward run with a heavy heart. On the way he was stopped by the great god Pan, who greeted him with the cheering promise of victory for the Athenians in the coming battle. This assurance Pheidippides bore home gladly—and with it he brought a sprig of fennel that Pan had given him as a pledge. Then spoke Miltiades, "And thou, best runner of Greece, bearer of this good news, what gift is promised thyself?" Pheidippides answered modestly, "Pan promised that soon I should have to run no more." There was tragic irony in those words of Pan, for, as Browning tells the tale, Pheidippides ran only once again. Soon the Battle of Marathon was fought, the Persians were routed and driven back to the sea. Pheidippides fought in the ranks. When victory was assured, Miltiades called the young man from the fray. "Run, Pheidippides, one race more. Athens is saved, thank Pan, go, shout!" Pheidippides bore the glad tidings to Athens, and fell dying as he gave out the news of victory.

GREEK ATHLETE LOOSENING HIS SANDAL
AN ANTIQUE STATUE IN THE LOUVRE

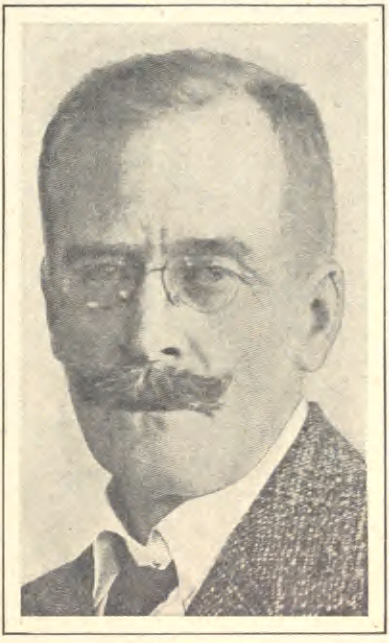
The only thing that mars this wondrous tale is that there is no sufficient historical authority for Browning's assertion that Pheidippides ran his last race from Marathon. An obscure historian gives the Marathon runner the name of Thersippus. But we prefer to rest our faith in Browning, and in the heroic young Athenian

"who could race like a god, bear the face of a god, whom a god (Pan) loved so well."

DOWN AND OUT; THEN UP TO THE HEIGHTS

HE COULDN'T RUN A STREET CAR, BUT WINS THE NOBEL PRIZE

IF you were a passenger on a certain street car line in Chicago, something over thirty years ago, you paid your fare, perchance, to a preoccupied, rather dull-looking man, with blond hair, pale-colored eyes, and features of a Scandinavian cast. If you asked him the direction of the car—north or south—he probably didn't know. You were carried by your corner because the uncouth foreigner on the rear platform was so deep in a pocket volume of Aristotle that he forgot to ring the bell. He didn't know the names of the streets anyway. He admits it. As a car conductor, he was a first class failure, and was peremptorily discharged.



KNUT HAMSUN
THE LEADING NORWEGIAN NOVELIST

If any of these things happened to you on the old Halstead Street or Cottage Avenue line, know that your absent-minded fare collector was the one-day-to-be-famous Knut Hamsun, in whose fallow mind lay, even then, the seed of genius. Recently, your conductor was awarded the forty-thousand-dollar Nobel prize for Literature for the year 1919.

A long and stony path led from the impoverished little farm where the child Knut was born, in 1860, up to the peaks of fame. The path strayed from bleak Norwegian vales to the wheat plains of Dakota; from a boyhood of "unearthly joys and abysmal despairs" to the ecstasy of accomplishment, wealth and adulation.

As a tiny boy, Knut Hamsun was sent to live with an uncle on an island of the sea where the long Arctic nights bred dreams, weird and provocative. He began to set down his fancies as soon as he was able to write. At seventeen he was working at a cobbler's bench, trying to earn money to print a story and a poem he had composed. A little while afterwards he was in Christiania knocking at the doors of the university. But the jobs he got on the docks of the big seaport were insufficient to keep him alive and pay his tuition. Temporarily, he gave up his hope of entering the university, and set out for America. For the next few years he was lumberjack and longshoreman, farmhand and road mender. But through all the discouragements of poverty and loneliness, he held to his boyhood dream of becoming a writer.

After a second trip to America, Hamsun worked his passage back to Norway. Well schooled by now in the practical university of Hard Knocks, he began again to write. Once he starved for three days; the experience was so impressive that he wrote a brief sketch called "Hunger." He sold it for three dollars and spent the money for bread. Several other attempts to maintain life on an empty stomach gave him the idea of expanding the sketch into a full-length novel. With dramatic irony, it was this tale of hunger that brought him instant repute, and leisure to write more books amid the peaceful surroundings of his little farm in central Norway.

In the university library in Christiania there is a room devoted to works by and about Norway's most popular author. Here are first editions and translations of all his books—novels, plays, essays, poems, and descriptive articles. Four novels of Norwegian life have been translated into English—"Hunger," "Victoria," "Shallow Soil," and "The Growth of the Soil." The last-named appeared in 1918, and this cap-sheaf of Hamsun's labors won him the Nobel prize. In his later stories the Norwegian genius has cast off the melancholy of youth's bitter years and has given us page on page lyric with the beauty of the woods and the life of the peasant in his beloved Northland.—*Sven Thalberg*

THE MOST POPULAR SONG

SUNG THE WORLD OVER IN STREET AND HOME

STEPHEN FOSTER comes to the fore again in a new book that has set the strings of memory all a-strumming. It doesn't take much to start reminiscent echoes from those who recall "the old days when I knew this, that, and the other." Dormant emotions respond quickly to old-time melodies. The new biography of Stephen Foster, by Mr. Harold B. Milligan, seems to have set a-flutter all the slumbering bats in the musical belfry. If we may judge by the echoes of the daily press, we are in for a good hearty revival of folk-song interest. Let us hope that the gentle voice of memory will call us back to a full appreciation of the musical treasures that we have in "Old Kentucky Home," "Old Black Joe," "Old Folks at Home," "Old Dog Tray," "Old Uncle Ned," and all the other "Old" sweet songs.

By courtesy of G. Schirmer

STEPHEN COLLINS FOSTER
FROM A DAGUERREOTYPE MADE WHEN HE WAS 33 YEARS OLD

As a little boy, America's premier balladist used to cause distress to his family by practising tunes on his flageolet and guitar instead of studying his school lessons. He began to write songs for a group of young people that used to assemble weekly at his father's Pittsburgh home, "The White House." The first of these improvised songs, "Louisiana Belle" and "Old Uncle Ned," were so much admired by a Mr. Peters of Cincinnati that the young composer presented both of them to him. Later he gave him the manuscript of "Oh, Susannah." From these three songs the publisher made $10,000—Stephen Foster not a cent!

By courtesy of G. Schirmer

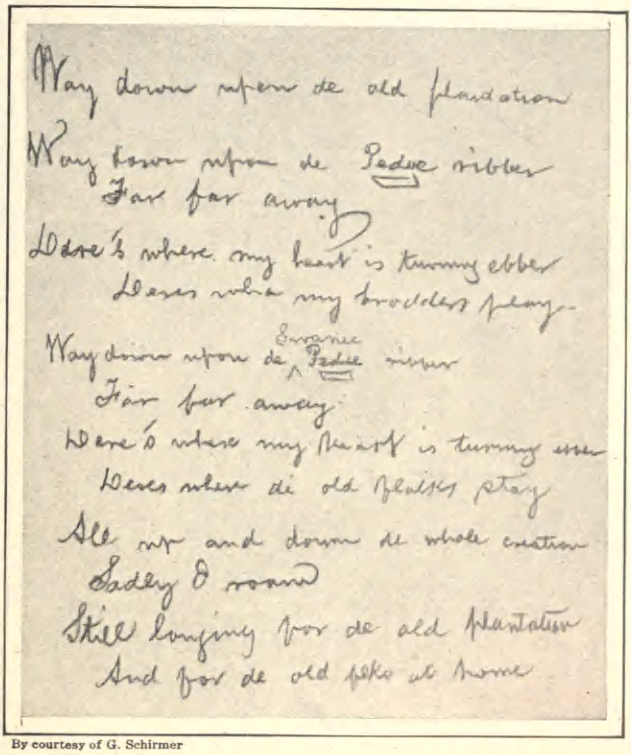
THE OLD KENTUCKY HOME
RESIDENCE OF JUDGE JOHN ROWAN, BARDSTOWN, KENTUCKY. JUDGE ROWAN WAS A RELATIVE OF THE FOSTER FAMILY, AND STEPHEN USED TO VISIT THERE AS A YOUNG MAN

Foster wrote one hundred and seventy songs. Morrison Foster, a brother, tells a delightful story about the one that is most beloved and widely sung—"The Old Folks at Home." Stephen had written out the words—he usually wrote both words and music—but he was dissatisfied with the name of the river referred to in the second line. The first draft of the verses is now treasured by Foster's granddaughter, custodian of the Foster Memorial Homestead, in Pittsburgh. It was entitled "'Way down upon de old plantation," and began:

'Way down upon de Pedee ribber,
Far, far away.
Dere's wha my heart is turning ebber,
Dere's wha my brudders play.

After he had composed the verses, he happened into his brother Morrison's office and said he wished someone would give him a better name for that river. "What Southern stream do you suggest instead of 'Pedee'?" Morrison offered "Yazoo," which Stephen thought wouldn't do. "Well, let's consult an atlas," said Morrison, who had a practical mind. On a map of Florida, way down at the tip, they found a little river called "Swanee." "That's it, that's it exactly," cried Stephen, and went home and rewrote the verses that have become familiar to later generations. Within a few years of its publica-

tion half a million copies of "Old Folks" were sold. It is said to be the most extensively translated song ever written. Travelers in remote parts of Asia and Africa report having heard native tribesmen singing their own words to Foster's emotional melody. "Aside from one or two national airs, born of great crises, this," says Mr. Milligan, "is probably the most widely known, best loved song ever written." Christy, the famous minstrel, was the first to sing the ballad, and willingly paid a fee of $500 for the privilege.



By courtesy of G. Schirmer

THE FIRST VERSION OF "THE OLD FOLKS AT HOME" AS FOSTER WROTE IT DOWN IN HIS MANUSCRIPT BOOK, IN 1851. NOTE THE CHANGE OF THE RIVER'S NAME IN THE SECOND VERSE. THE TITLE ORIGINALLY CHOSEN WAS "WAY DOWN UPON DE OLD PLANTATION"

Though his most popular compositions breathed of the Southland, Foster never lived below the Mason and Dixon line, and made only occasional pleasure trips there on a steamboat belonging to a brother. He was born in Pittsburgh on the day Thomas Jefferson and John Adams died, July 4, 1826. He married in 1850 a wife out of sympathy with his dreamy, impractical ways. His life with her was bitterly unhappy, and he drifted to New York. His royalties, which now amounted to $1,500 a year, were sent back home to his wife and daughter. The descent of Stephen Foster, the man of a thousand heart-stirring melodies, was a tragedy that, seemingly, no power could avert. He became a vagabond of the city streets, friendless, drunken, and destitute, living in cellar rooms and disreputable attic lodgings.

It was at this period of his life that he strayed one day into a store on Broadway and, sitting at a piano, won from the keys the wistful pleading tune, "Come where my love lies dreaming." A gentleman present offered him five dollars for the rights to the song, and he accepted it gratefully.

The climax of the tragedy was Foster's death in a public ward at Bellevue Hospital, New York. He was entered on the records as a "laborer"... The fruit of his labors is a sheaf of folk songs that will forever ring in our hearts.

The grave of Stephen Foster, "finder of many melodies," is visited by an occasional pilgrim to a hillside cemetery in Alleghany, across the river from Pittsburgh, Pennsylvania. As a composer, he had but mediocre talent, without a sound basis of musical education. It may be doubted, however, "whether greater technical facility would have improved his music or achieved for him a greater name in history. Stephen Foster touched but one chord in the gamut of human emotions, but he sounded that strain supremely well. His song is of that nostalgia of the soul which is inborn and instinctive to all humanity, a homesickness unaffected by time or space. From the unpromising soil in which he grew, he was able to distill by some strange alchemy of the soul a sweet magic of melody that won him immortality far beyond his dreaming. Foster occupied a unique position in the history of music. No other single individual produced so many of those songs which are called 'folk songs,'—songs that so perfectly express the mood and spirit of the people that they become a part of the life of the 'folk,' and speak as the voice, not of an individual, but of all."

SNOW, AN ASSET OR LIABILITY?

THE average city dweller regards snow as a nuisance. It interrupts transportation, and interferes with wire communication; it makes automobiling impossible, so that we are reduced to the necessity, so humiliating to some of us,—of walking, and of wearing cumbersome rubbers or boots. It adds to the tax-payers' burdens when it has to be removed from city streets. In New York, Chicago and Boston the cost of snow removal amounts to millions of dollars every winter. Last February's snow cost New York city for removal alone over two million dollars. During the whole winter there were 11,207,403 cubic yards of snow removed from the streets of New York, at a total cost of $6,000,000. Over 45 inches of snow fell, and the winter is recorded as the most severe in fifty years.

AN ALLEY THROUGH SNOW TEN FEET DEEP

WINTER LIFE IN A FAR WESTERN TOWN

When deep snow melts rapidly it, occasionally, causes floods, particularly on those occasions when the ground is frozen and can therefore absorb only a small portion of the water resulting from the melting of the snow.

MORE ASSET THAN LIABILITY

But in spite of all these things snow is more of an asset than a liability.

You have suffered so from snow that you don't agree with me? Suppose you disregard personal inconvenience for a minute and consider the benefits, by and large, derived from snow. Logging and lumbering, as well as the transportation of bulky and weighty quantities of grain, wood, coal and ice could not be accomplished easily without snow. Transportation by sled is easier than by wagon, as there is smaller loss of energy due to friction, and to wear and tear. A snow cover prevents the occurrence of prairie fires. Forest fires are least likely in midwinter, for the same reason. Snowflakes make the air pure and wholesome by removing microbes, soot and dust particles from the air through which they fall.

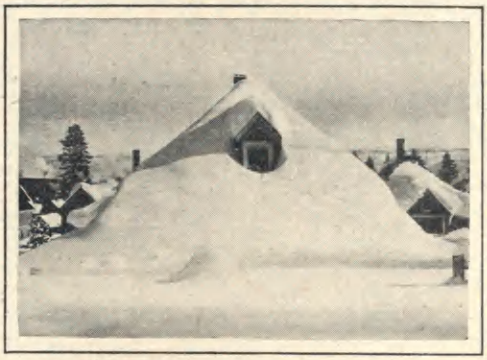
Snow accumulates to great depths in the western mountains every winter, and through pressure and alternate melting and freezing soon solidifies the ice. As the latter slowly melts during the spring and summer it forms the only available water supply for the great hydro-electric power plants and for irrigation, without which the West would still be an arid and abandoned desert. But the most valuable feature associated with snow is that of its value to agriculture.

A PROTECTIVE COVERING

As a protective covering snow serves much like leaves or straw, only in a lesser degree. Loosely packed snow, containing much air mixed with it, serves as an excellent blanket to protect submerged vegetation from frost and extreme cold. It checks the loss of heat from the ground through conduction or radiation, and prevents evaporation from the soil. It permits the penetration of some light, thus making slow growth possible. Snow has aptly been called "poor man's manure," for the reason that melting snow moistens the soil gently and gradually, without compacting the surface soil, and most of the moisture

A NEW YORK CITY WINTER

AT TIMES TOO MUCH EVEN FOR A TANK



ALL UNDER BUT THE HOUSE TOPS
SNOW-BOUND IN THE NORTHWEST

is absorbed by the subsoil. Every farmer has observed that a good hay crop follows a winter of abundant snow. "A snow year, a rich year," says one proverb. The success of winter wheat is largely dependent upon an adequate snow cover.

Besides acting as a protective cover against temperature extremes, wind and evaporation, snow permits the penetration of some light and the respiration of the plant tissue; it supplies the necessary winter moisture, and prevents the tearing and the heaving out of the roots by alternate freezing and thawing. Kansas is the leading winter wheat-growing state because it usually gets enough snow each winter to protect the growing crop. North Dakota, on the other hand, while the leading producer of spring wheat, grows very little winter wheat because there is usually insufficient snow to protect the crop from extremely low temperatures that occur there every winter.

From an agricultural point of view, the amount of snow lying on the ground is of considerable significance —so much so that the United States Weather Bureau publishes weekly and monthly maps showing the amount of snow-fall. There are also reports giving the normal amount of snow for a whole year. This is an important consideration in studying the climatic conditions of agricultural lands.

The biggest work of all performed by snow is the one that is told by the story of the geological ages. Vast accumulations of snow, gathering and sliding down ravines, join together and pack into great glaciers that play a titanic part in Nature's constructive and destructive operations. It is the slow, resistless grinding of glacial action that changes the face of Nature. The strange, beautiful mountain forms of the Yosemite Valley, we are told, have been carved out by the glacial action during centuries. From the base of great glaciers flow forth many streams to fertilize the fields. Some of the greatest works in geological history have been wrought by snow and ice. Soft and white, in its gentlest mood, it is a plaything for children; in its greatest and grimmest aspect it is one of the most formidable and stupendous agencies in Nature.

Take it all in all, snow forms one of our most important natural resources. So, when you have to break a path from your door through two feet of snow remember that what is one man's curse is another man's cure; what is one man's white burden is another man's blessing.

—*A. H. Palmer.*

WHEN THE SNOW BLANKET COVERS A TOWN
IT MEANS HARD WORK FOR FATHER

BUT THE CHILDREN CALL IT FUN

ANIMAL CAMOUFLAGE

WHY does the tiger wear a striped coat and the chameleon a skin of many colors? Why are the hare's winter furs pure white, and its summer suit a reddish brown? Why has the fawn a pelt of mottled hue, and the full-grown deer a mantle of dull leaf-tone? For what purpose do these turncoats don their varying raiment? The answer is simple, and yet it betrays the innermost drama of animal life and habits.

The tiger's stripes are dazzling camouflage, painted by the knowing hand of Nature. When the master hunter stalks his prey in jungle grass and bamboo thicket, his coat, as he seeks to and fro, simulates the come and go of light and shade amid the gloomy verdure. Velvety bands of black parallel the shadows, the gold stripes ape slim shafts of sunlight. The great cat's coloring also serves him when he must exercise his craft and swiftness to evade the cunning of human hunter.

The stripes of the tiger run up and down because he lurks among the tall grasses. Nature, the supreme *camoufleur*, dapples the leopard with contrasting spots, because this pirate of the jungle trail crouches low on the limbs of trees. His gaudy coat, zoologists say, imitates the interrupted sunplay among the leaves.

The garb of a fawn, young and defenseless, is strewn with white spots. It spends its days in the depths of the woods, where the light falls palely and white wildflowers abound among the fallen leaves. After its antlers grow out and its slender legs take on their native fleetness, the deer becomes more independent of friendly concealment. The spots fade, the coat turns a uniform brown, and the spreading horns assume the shape of tree branches. There is no better example of Nature's art in camouflage than the deer.

Courtesy American Museum of Natural History

WHITE-TAILED PTARMIGAN IN SUMMER PLUMAGE

The grouse, or ptarmigan, the weasel and the mountain hare alter their color according to the season. The hair and plumage of these creatures, whose life is spent close to Mother Earth, change with the calendar, from the shade of summer foliage to the white of winter snows. In the case of the weasel, the name changes with the color. A white weasel is rechristened "ermine." If the skins of my lady's ermine cloak had been taken in summertime, the garment would be a smoky brown, instead of snow-white, and its value and beauty decreased accordingly.

Birds that live on the ground must forswear the vivid plumage of their cousins in the treetops, because—tragic reason—they dwell closer to Man, their enemy.

Someone has called the chameleon "an animated joke." And a most disconcerting jest he sometimes is. He crawls onto a stalk—and disappears in the hues of his green perch. Lift him to a leaf of brown and white, and he assumes the shades and spots of the background.

From jungle to meadow, from beast to butterfly, the drama of existence goes on, aided by the gentle hand of Nature.

—*J. Parker Ross*

Courtesy American Museum of Natural History

WHITE-TAILED PTARMIGAN DRESSED IN ITS WINTER COAT

WHY MONA LISA HAS NO EYEBROWS

IN one of the women's reading clubs, to which The Mentor is a regular visitor, a lively discussion has been going on concerning the Eyebrows of Mona Lisa. After much argument, the participants in the discussion found that they, like Omar Khayyam, "went out by that same door wherein they went"—and so they ended by referring the matter for settlement to The Mentor.

"I definitely remember," writes one of the club members, "that I read some years ago that Leonardo da Vinci's 'Mona Lisa' had no eyebrows, and that the reason for it was that, at that period, it was the fashion for ladies to go without eyebrows."

There is no gainsaying Fashion in any time or place. It has held sway since the beginning of human history. Fashion started with the rib-bone of Adam, and, through all time, according to varying taste and whim, the rules of Fashion have been dictated by the fair and gentle product of that rib-bone. And this is true of men's fashions as well as women's. We are familiar with the old homely lines:

Said Aaron to Moses,
"Let's cut off our noses;"
Said Moses to Aaron,
"'Tis the fashion to wear 'em."

It was the style for men to wear beards in one generation, and shave clean in another. Why, then, might not woman set a fashion for a period, based on the fancy that a smooth, clear brow is to be preferred?

Our correspondent was intent on getting the light of authority on Mona Lisa's eyebrows. "I do not want," she tells us, "an opinion as to whether the pictures of Mona Lisa '*look*' as if they had or had not eyebrows. I have asked numberless persons and they all differ in their opinions. I even wrote to several art museums, and all I got was some correspondence in which it was stated that the woman writer *thought* that Mona Lisa *had* eyebrows because she had noticed that the Madonnas of that period all had eyebrows. Now, a Madonna would, as you well know, have no connection with the styles of the ladies of Florence during the life of Leonardo. I am exceedingly anxious to know positively and with authority what the truth is on the subject."

By Leonardo da Vinci. In the Louvre, Paris

MONA LISA
THE MOST DISCUSSED PICTURE IN THE WORLD

Interested as much in getting the truth about the matter as in obliging our correspondent, we referred the subject to one of the leading art authorities of the country, an instructor in one of our great universities, and an occasional contributor to The Mentor. From him we got the following interesting information:

"It was undoubtedly a custom of the early Renaissance time for the ladies to pluck out or cut off their eyebrows. It did not obtain among all classes, but certainly there are many instances in painting and in sculpture showing that the eyebrows, so far as the hair is concerned, have been removed. The young women portrayed by Leonardo da Vinci and his pupils were almost all of them devoid of hairy eyebrows. The people of age, whether men or women, were generally given marked eyebrows. The Mona Lisa at the present time shows no hair upon the eyebrows. I imagine Leonardo preferred the youthful face to show the rounded contour of the brow rather than to have it muffled by a fuzz of hair. Whether Mona Lisa in the life had eyebrows or not no one can say. I have certainly seen many marble busts of the Renaissance period with no suggestion of hair upon the brows."

THE OPEN LETTER

THE MOST INDEPENDENT MAN IN THE WORLD

Alexander the Great came one day upon Diogenes sitting in his tub—the only quarters that he had. "What can I do for you, Diogenes?" asked Alexander. "Just one thing," replied the old philosopher. "Get out of my sunlight—that's all."

There true independence spoke. When Alexander the Great gave a command, an army of men obeyed; when Diogenes opened his lips the whole world listened and considered his words. The old philosopher neither feared nor respected conquerors. There was nothing that they could do *for* him or *to* him. He had his sunlight, his tub, and his lantern to light him in his search for an honest man. In the common expression of our day, "No one had anything on him." When he was asked what business he understood best he answered: "How to govern men."

Diogenes was the Independent Man of ancient times. There is no independence like that of the man of brains who has the power of expression.

Who is the most independent man today?

Not the multimillionaire, burdened with heavy responsibilities; not the prince or king, scarcely more than a palace prisoner; not the leader in legislative halls, often the tool of his party; not even the farmer, who is bound down fast to his land.

The Independent Man of today is the man of brains who can *write*. The man that has things to say that the people want to hear, and knows how to say them, stands four-square to the world, a prophet honored in every land. His pen is his scepter, and he carries it wherever he goes. Conscious of his power, he stands with confidence in the presence of the great. All respect the man to whom the people delight to pay tribute.

The most independent man in the United States in our generation was Mark Twain. He won his independence in early years, and held it through life. He made a fortune, and lost it. What would have been the financial ruin and utter downfall of other men was simply the beginning of a new chapter for him. It merely meant resuming his pen for a time. In the midst of his fallen fortunes, a millionaire friend said to Mark Twain, "You write, and I will underwrite." Mark Twain took a trip around the world—told about it in a book, wrote a number of stories, and reestablished himself.

The Independent Man of today is George Bernard Shaw.

Some admire him for his wit, some for his defiance of accepted conditions, some for his radical socialism, and some for his topsy-turvy, paradoxical philosophy. Let the critics discuss the subtleties of his style and his place in literature. We note here his supreme independence. He fears no one and respects no convention. He does his own thinking. When he has anything to say, the people listen. He may say exactly what he thinks without mincing words, or he may apply an irritant by saying what he *doesn't* think—amusing himself by perplexing and confounding his readers.

If his utterances displease and the cry of "outrageous" rises against him, he bids cheerful defiance in a barrage of glittering epigrams—and the public wonders at him and laughs. So potent is his spell that he can draw a theater full of people, many of whom only half understand him, but all eager to avow their admiration and appreciation of him.

What is the full measure of his independence? We have had it in the last five years. During the period of war stress, when the lips of public men were tight locked, George Bernard Shaw was saying whatever he chose, whenever he chose—often in caustic, cynical criticism that cut straight to the bone.

The man that has a message that interests the world, and knows how to give it words, is the Man of Independence. Rich and prosperous? No, probably not—but free and supremely independent. He has the ear of the world, whether he dwells in the great centers of civilization, or, like Robert Louis Stevenson, in the far off island of Samoa. He is the real "Master of his fate, and Captain of his Soul."

W. D. Moffat

EDITOR

Discoverers of a New World

HARDLY a year passes that these famous men, Mr. John Burroughs, Mr. Henry Ford, Mr. H. S. Firestone and Mr. Thomas A. Edison, do not take a camping trip to the great outdoors to get close to Nature, and forget their business worries.

Nature is one of the subjects that fascinates everyone—yet the average person knows little or nothing about it. The knowledge of any big, vital subject makes it a precious possession. The country about you would be far more interesting if you had a knowledge of the living wild things: could know the birds by name, their habits, their peculiarities: for all the species are different. Many of the birds are rapidly becoming extinct, and it is a duty as well as a joy to know them. A full knowledge of the wild flowers that you see in your walks is an accomplishment more than worth while. The same is true of the trees—while every species of little animal and insect and butterfly lives a life full of wonderful secrets. You can gain an intimate knowledge of the tens of thousands of interesting subjects, and you will enjoy the greatest pleasure in learning about them. The children will read the volumes with pleasure too—they are so delightfully written.

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Every reader of The Mentor is invited to send for this Free Booklet that gives Dr. Eliot's own plan of reading

P. F. COLLIER & SON COMPANY
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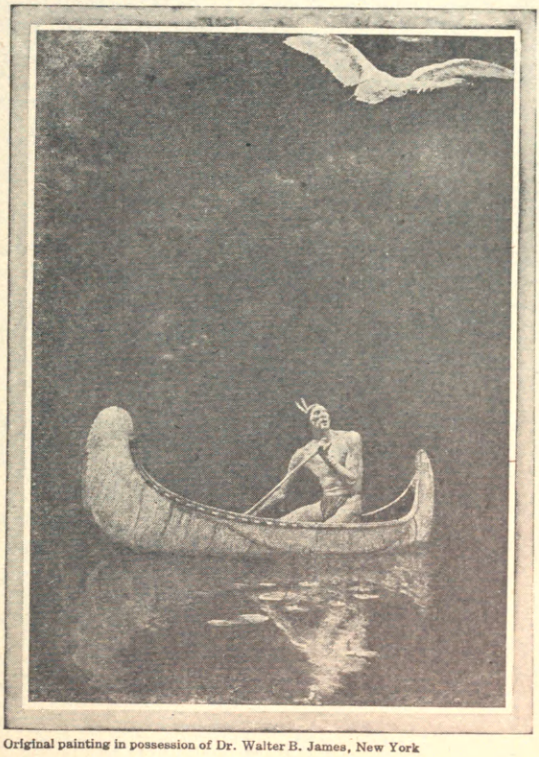
FIRST FAMILIES OF AMERICA



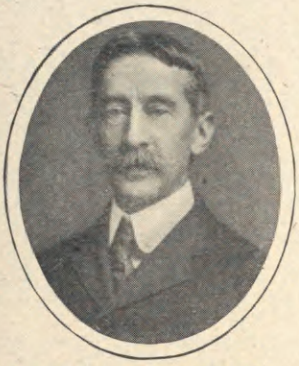
Original painting in possession of Dr. Walter B. James, New York

THE SILENCE BROKEN

By George De Forest Brush

BLACKFOOT INDIANS IN WAR REGALIA
Glacier National Park

THE MENTOR
VOL. 9 SERIAL NUMBER 217 No. 2



GEORGE BIRD GRINNELL

FIRST FAMILIES OF AMERICA

By GEORGE BIRD GRINNELL

Mr. Grinnell is a supreme authority on the American Indian. He is a traveler, writer, and editor. He has dwelt with Indians for fifty years; he is a chief in several tribes; and mountain, lake, and glacier have been named for him.

WHEN the white men first came to the western shores of the North Atlantic Ocean they found a people different in appearance and in ways of life from anything that they had known. These people belonged to the Stone Age. They knew nothing of the use of metal, except that, occasionally, when they found pieces of native copper, they hammered them out to make ornaments, or, in rare cases, ground them down to make a cutting edge. Cutting and piercing implements—the points with which the hunter headed his arrow, or his lance—were of stone or bone, chipped, hammered, and ground to an edge or to a sharp point. Clothing was of skin, and the movable habitations for the most part were of skin, bark, or mats stretched over a frame of wooden poles. There were some permanent dwellings, differently constructed in different parts of the continent.

The Indians have been here a long time, so long that the tribes have come to possess physical characteristics remarkably alike, and the North American Indian is called one of the races of the earth—the "red race." The truth is, however, that Indians are not red skinned but brown; but they commonly painted the face with red ochre, and those that first saw them supposed that this was the color of the skin and called them "red men."

MANY VARIED TRIBES

Most people think that Indians are all alike and one who has been much among the Indians is sometimed asked if he speaks "Indian." As a matter of fact, more than fifty

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THE HUNTER—Blackfoot Indian

distinct linguistic stocks have been named among the Indians in North America, north of Mexico, and within a single stock there may be a dozen closely related languages, each unintelligible to people who speak other languages of the same stock. We may understand just what this means if we remember that the various European nations, as Swedes, English, Italian, and French, who belong to a single linguistic stock commonly called the Indo-European, speak different languages and do not understand each other. Within a single Indian linguistic stock also, there may be languages unintelligible to related tribes. The difference between two linguistic stocks,—as, for example, Caddoan and Algonquian—is as great as that between Indo-European and Semitic; that is to say, as between English and Hebrew.

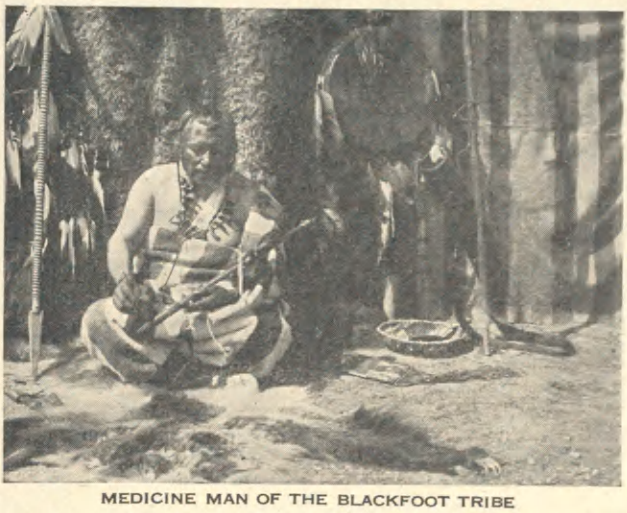
Courtesy, American Museum of Natural History, New York

AN OLD APACHE
Making an Arrow Shaft

Within some of these linguistic stocks are many tribes scattered over a wide extent of territory and living under widely different conditions. Thus the Algonquins ranged from Virginia north along the Atlantic Coast to Labrador, and thence west as far as the Rocky Mountains. How unlike were the habits of the shell-fish eating Algonquians of the Atlantic seacoast in Virginia and those of the buffalo hunters of the high dry plains; or those of the fur-clad Athapascans who live at the mouth of the Mackenzie River and their naked relatives of the cactus grown plains of the Southwest.

As all human beings try to get a living with the least possible effort, the surroundings of any tribe necessarily affect their mode of life. The people of the far North depended for food on the fish that swam in their lakes, the moose and caribou of their forests, and the wild fowl that reared their young in the swamps. These northern people traveled by canoe in summer and by sledge in winter, and

occupied warm and comfortable dwellings of birch bark. Tribes living on the seacoast subsisted largely on fish and shell-fish, but killed deer and small animals and birds, and raised their crops.



MEDICINE MAN OF THE BLACKFOOT TRIBE

In the Southeast and quite generally in the occupied interior were permanent villages, often surrounded by a ring of palisades, erected to protect them from possible attacks by enemies. In the Middle West and on large rivers of the great plains, there were permanent houses built of poles set in the ground outside of which sods and earth were piled for walls and a roof, making a beehive-shaped lodge of earth which was dry, warm, and comfortable, and large enough to accommodate twenty-five or thirty people. On the great plains, and in portions of the lake region, conical bark or skin-covered lodges, of the form called *tipi*, were common, and, where used, gave the people great freedom, for they could pack the rolled up bark in their canoes or the folded skins on their animals and move from place to place, camping at any advantageous point. Down in the Southwest are still found the towns—pueblos—occupied by different stocks of sedentary Indians who lived in community houses without doors or windows, formerly entered by movable ladders leading up to the roof, through which was the entrance to the house. The ladder could be drawn up, and, once on the roof, the people were safe from their Indian enemies. Some of these pueblos are still occupied, but there are great numbers of them that are now only sage-brush-covered mounds which hide all that remains of what was once an active, bustling, industrious community. Little by little these ruins are being excavated, and each one reveals some surprise about the life-history of these ancient people.

Courtesy, American Museum of Natural History, New York

ARAPAHO INDIAN DANCER

Far older than this pueblo civilization is that prehistoric mode of

life in which the people built their stone houses on the ledges of the cliffs, often far above the reach of any enemies who might strive to attack them. These ruins may be seen in great numbers and extraordinary perfection in the Mesa Verde National Park, Colorado.

Many tribes of Indians manufactured pottery, or basketry, or both, and others made vessels of birch bark. Of these pots and baskets there were varying degrees of excellence.

The Indians had for a helper a single domestic animal, the dog. He was employed to some extent in hunting, but was chiefly useful as a beast of burden, aiding the people in transporting their possessions as they moved from place to place. Light packs were put on his back, and he also hauled the *travois*, which consisted of two short poles fastened together over the dog's back and dragging on the ground on either side behind the animal. On these two dragging poles was fixed a platform and on the platform the load the dog was to haul.

Courtesy, American Museum of Natural History, New York

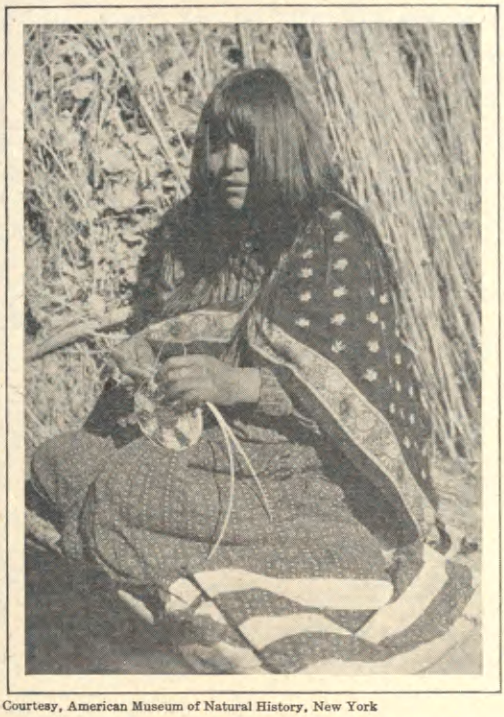
THE BLANKET MAKER
Navaho, Arizona

Copyright, Lee Moorehouse

TOX-E-LOX AND A-LOM-PUM
Cayuse Twins — great grandnieces of Chief Joseph, of Nez Percé War fame

INDIAN FAITH AND FEARS

The Indian's life was passed in the open air and in close contact with nature. He drew his sustenance from the earth and from the wild creatures that lived upon it. He was a part of nature, and better than anything else he knew nature. A close and constantly watchful observer, nothing escaped his eye. He read the signs of the earth and the sky, and the movements of birds and animals, knew what these things meant, and governed his acts by what



Courtesy, American Museum of Natural History, New York

THE BASKET WEAVER

Apache, Arizona

these signs told him. Though a close observer, he was not a reasoner. Things were constantly happening all about him that he could not explain—that were mysterious. The causes he assigned to account for these things were fantastic. He assigned some especial power to almost every object in nature. The sun, the moon, and the stars were persons. Birds and animals might transfer to him their power to do certain things, or when they uttered their cries he believed that they spoke to him—and in a language that he understood—of things that were happening at a distance or that were to take place in the future.

Things that he could not explain he greatly feared, or rather he feared the power that caused them. He feared the mysterious dangers that surrounded him; the arrow sent by the thunder — the lightning — the darts of disease that might be shot into him by some spirit lurking near a spring, or the under-water monsters that might seize and drag him down as he was crossing a lake.

Because the Indian feared these mysterious things he prayed constantly that he might escape these dangers, and, in that sense, he was one of the most religious of men. He constantly implored the help of the unseen powers, and made sacrifices to them to win their favor. As with most primitive people, he believed that suffering and sacrifice were likely to win the favor of the superior powers, and the most acceptable sacrifice was that which a man most highly valued—his own body—and so the Indian often inflicted suffering on himself. When starting off on the warpath, each man, as he prayed for success, might offer to the higher powers a strip of skin cut from his arm.

A YOUNG MOTHER OF THE HILLS

THE FLOUR STONE

THE COUNCIL

Courtesy, American Museum of Natural History, New York

INDIAN CHARACTER

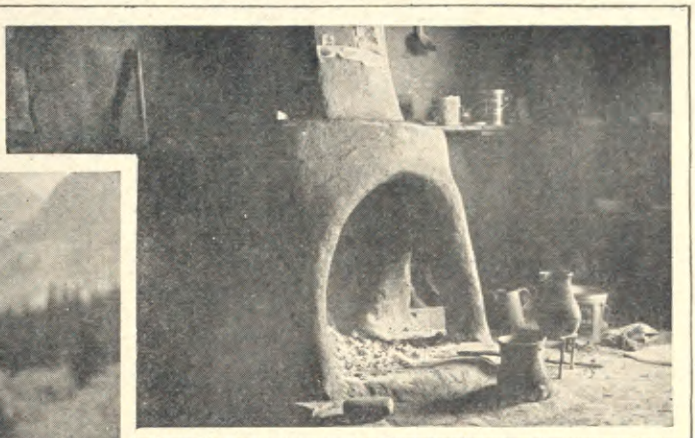
The Indian's reputation for ferocity comes from people who have not seen much of him. He is much like other people in the world,—kindly and friendly to those he likes, and sullen and revengeful toward those he considers foes. No injury was too severe to be inflicted on an enemy, while, for a friend, he would make any sacrifice,—would starve and fight and die. Indian children were taught never to quarrel with their fellows, but to be always good-natured, and not to lose temper under any circumstances. In some tribes children were taught songs whose purport was that children should walk through life, side by side, with affection and helpfulness one toward another.

This was the teaching, the feeling and the rule of action of an Indian camp, yet, as in every other group of people, there were differences in character among the people in an Indian camp. Some were always cheerful, kind, polite, and friendly; others at times were morose. Some were harum-scarum, jokers, mischievous all their lives long, while others were serious, grave, and well-balanced.

CAOPA BOY
A little native of the Southwest

THE HEARTH

THE CRADLE



Courtesy, American Museum of Natural History, New York

INDIAN DEMOCRACY

The government of the Indian camp was a democracy. There were chiefs, a council of chiefs, and groups of soldiers so-called—societies of men who acted as police and carried out the chief's orders; but every individual was absolutely his own master. The chiefs gave orders, but rarely attempted to enforce obedience. They advised rather than commanded. The governing force of the camp was public opinion. If the chiefs declared that on the morrow the camp should move to a certain place, a band of the soldiers would see that the lodges were taken down and the people moved out; but, on the other hand, a family, or a group of individuals, might determine to separate themselves from the main camp and to go off and live by themselves. If people did this, they were not interfered with.

If fifteen or twenty or fifty men started off on the warpath under the direction of one or two leaders, any member of the party might at any time leave the party and return to his village or might go off by himself. There was the greatest indi-

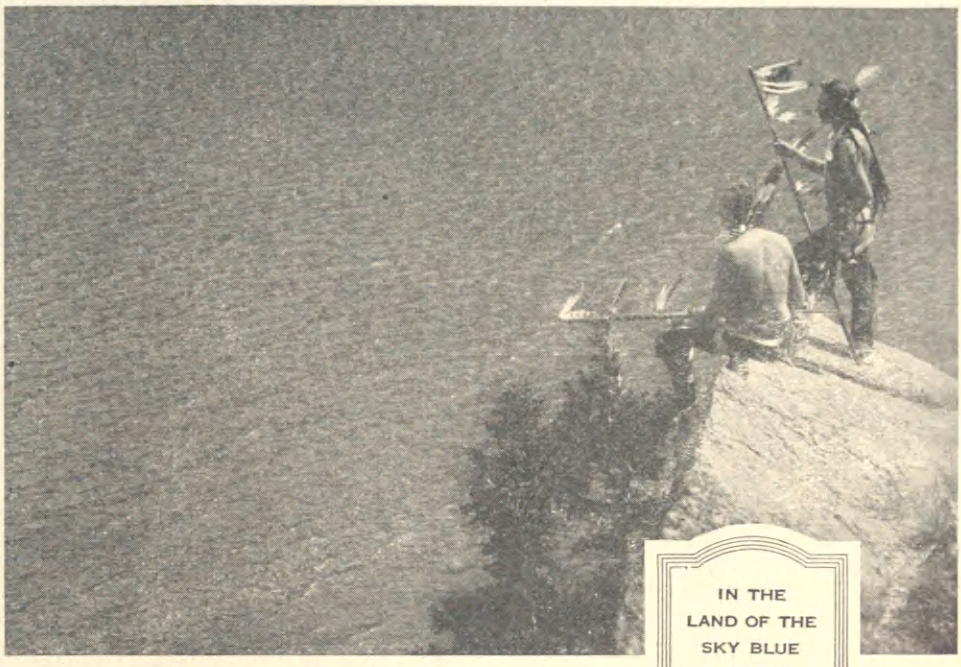
CAOPA MAN
A veteran of the tribe

COMPANIONS OF THE LONESOME TRAIL

vidual liberty and independence. Because of this independence and individual liberty the Indians never could organize, or hold together for any length of time for united action. Had they been able to organize, they might very likely have been able to hold back their enemies, and it is quite probable that today the white people would still be on the east side of the Mississippi River.

Many popular errors prevail as to the ways of life of the Indian. One, given to us in books, is that which implies that the women are the laborers and that the men spend their time sleeping and smoking in the shade while the wives work.

The fact is that the labors of an Indian camp were quite evenly divided between men and women, and this division was well understood. As everywhere, the woman cared for the home while the man was the provider and defender. Thus, in the camp, the woman was continually occupied preparing the food, making ready the skins for use as clothing or for shelter, or packing up the family possessions if a move was to be made. The man, on the other hand, went off on the warpath to capture property, hunted for food in all sorts of weather, and was always ready to defend the tribe or his family. A person carrying a load on his back cannot get about quickly and fight actively; it was for this reason that the man went ahead, carrying only his arms, while the woman followed behind, leading the pack animals and perhaps herself carrying a burden.



IN THE LAND OF THE SKY BLUE WATER

INDIAN IDEA OF LAND RIGHTS

Until the coming of Europeans, the North American continent evidently belonged to the people who lived on it—the Indians, and it is supposed that the white man gained possession of the continent by *buying* it from the Indian tribes.

The first Europeans that came here and wanted to buy a piece of land naturally supposed that the Indian's view about the ownership of land was the same that the white man held and that if a tribe owned the territory where it lived it could perfectly well, if the price was satisfactory, sell that territory, or a part of it. As a matter of fact, however, the Indian had no *idea of ownership in land* as we understand it, and could not conceive that an individual could absolutely *own* land; and therefore he could not understand *selling* land. The Indian's right in a piece of land was the *right of occupancy.* If he had taken possession of a piece of land and was using it, it was his to occupy as long as he lived, unless he were ousted from it by some stronger person. Nevertheless, he was no more than a life tenant. He possessed this right to occupy the land and make such use of it as he desired, but after him his children succeeded to his rights in the land and neither he nor they could part with these rights, for the children of his children possessed the same rights—and these could not be alienated.

Even to the present day, one may sometimes hear old Indians speak of

the land which they had *loaned* to the white people, the idea being always that some day, this land must be handed back to the tribal occupants who had temporarily parted with their right of occupancy. The view is so totally opposed to our traditions and manners of thought that it is not easy for the white man to comprehend; but if not easy for the white man to understand, we can perhaps better comprehend how impossible it is for the Indian to understand the opposite view.

SHE GETS YOUR NUMBER
A young Indian telephone girl at the Log Hotel, Glacier National Park

Because we have read chiefly of the Indians of the plains who possessed horses, and followed the buffalo from place to place, we think of the Indians as nomads—wanderers from one part of the earth to another, and without a settled home. This is quite a mistake. An Indian tribe usually had a narrow range, and did not wander very far from their usual camping places, except when—as often they did—the men made long journeys to war. On the other hand, sometimes because of the difficulty of securing subsistence, a tribe might start off on a long journey, but such a journey—a migration from one territory to another—might be extended over many generations of time.

Many of us are disposed to think of the Indian as a sort of irresponsible person who acts only on the whims and emotions of the moment, but as a matter of fact the Indian is conservative, and his life is governed largely by laws and rules based on customs handed down to him from his ancestors. These customs he is very unwilling to transgress.

We think of the Indian as improvident, eating today all that he has, and taking no thought for the morrow. This is another wrong idea. If the Indians were not as provident as thrifty white men, they still tried to make some provision for the future, and stored up for winter use the fruits of the earth—wild and cultivated—that they secured during the summer. They dried roots and berries and corn, and preserved the meat or the fish that they procured in quantity, and held it over against a time of scarcity. Yet it is true that, under some special stress of circumstances, they suffered from lack of food and sometimes even starved.

The Indian is simple, honest, and —when one gets to know him—very likable. The most interesting thing about him is that of which at first we are least likely to think, his humanity—his quality of being human. In all respects he is like the average human being. Intimate relations with the Indian show us that, in the savage, may be found the same good qualities that our own people possess.

THE APPEAL TO THE GREAT SPIRIT

CYRUS DALLIN, THE SCULPTOR, MADE THIS NOBLE STATUE OF THE RED MAN THAT STANDS BEFORE THE BOSTON MUSEUM OF FINE ARTS

THE LAND OF HIS FATHERS

A NAVAHO BOY OF TODAY. PAINTED IN NEW MEXICO BY WILLIAM R. LEIGH. THE BOY, DRESSED AS WERE HIS FATHERS, IS SEATED UPON THE RUINS OF THE ADOBE DWELLINGS OF HIS TRIBE

A MADONNA OF THE PLAINS

AN INDIAN MOTHER WITH PAPOOSE. THE BABY IS CARRIED ON THE BACK WHEN THE MOTHER IS WORKING, OR, IF THE PAPOOSE INTERFERES, IT IS HUNG TO A CONVENIENT TREE, OUT OF HARM'S WAY

FAR FROM LANDLORDS AND PROFITEERS

AN INDIAN HOME BY A MOUNTAIN LAKE. WHEN THE SCENERY PALLS, THE FISH CEASE TO BITE, OR, FOR ANY OTHER REASON, THE FAMILY WISHES TO MOVE, DOWN COME THE TEPEES AND THE FAMILY MOVES ON TO A NEW ABODE

IN NATURE'S TEMPLE

INDIANS PRAYING TO THE GREAT SPIRIT, EXPRESSED TO THEM IN THE RUSHING WATERS OF THE WATERFALL. THE RELIGION OF THE INDIANS, LIKE THAT OF OTHER SAVAGE RACES, IS WORSHIP OF NATURE AS PERSONIFIED BY GODS AND SPIRITS

BEFORE THE DAY OF THE FLIVVER

THIS IS HOW THE PLAINS INDIANS MOVED THEIR HOUSEHOLD GOODS. THE POLES CROSSED OVER THE PONIES' BACKS AND DRAGGED TO THE REAR ARE KNOWN AS TRAVOIS. ON THE PLATFORM LASHED TO THE POLES WERE LOADED SUCH ARTICLES AS WERE TOO HEAVY TO BE CARRIED. ONLY SQUAWS' PONIES WERE MADE TO DRAW THE TRAVOIS; THE MEN RODE UNENCUMBERED SO AS TO BE IN THE BEST POSITION TO USE THEIR WEAPONS

SIOUX CHIEF IN WAR GARB

PAINTED BY W. HERBERT DUNTON

THE SIOUX, ONE OF THE LARGEST OF THE INDIAN TRIBAL GROUPS, OCCUPIED PRAIRI REGIONS OF THE MIDDLE WEST. THEY WERE EXPERT HORSEMEN, HUNTERS OF THE BUFFALO, AND INDOMITABLE WARRIORS

THE DESTINY OF THE RED MAN
BY ADOLPH WEINMAN

THE SUN VOW
BY HERMAN MAC NEIL
IN THE METROPOLITAN MUSEUM OF ART, NEW YORK

INDIAN WARRIOR
BY ALEXANDER P. PROCTOR

POCAHONTAS
BY WILLIAM ORDWAY PARTRIDGE

BLA
BY L
AT EAGL

THE INDIAN IN SCULPTURE

—The Indian has been a truly native source of inspiration to American sculptors. More and more he is being depicted in bronze and marble, as the statues of American parks and public buildings show. "As fine a type as the Greek warrior of antiquity," one artist has said. In many instances, Indian sculpture has an historical local interest;

THE INDIAN HUNTER
BY J. Q. A. WARD
IN CENTRAL PARK, NEW YORK

THE DESTINY OF THE RED MAN
BY ADOLPH WEINMAN

WK
AFT
LLINOIS

SACAGAWEA
BY ALICE COOPER
IN CITY PARK, PORTLAND, OREGON

THE MEDICINE MAN
BY CYRUS DALLIN
IN FAIRMOUNT PARK, PHILADELPHIA

he statue of Black Hawk shown above, memorializes the Indians of Illinois who were driven from their holdings. While orado Taft, the sculptor, has named his monumental work after the leader of the Sac and Fox tribe that fought efforts oust him until overpowered, the statue is a composite study of the Indian of that region. It stands on an eminence ear Oregon, Illinois, a gift of the sculptor to his native state and a tribute to its heroic first inhabitants.

COPYRIGHT 1901 BY CHARLES SCHREYVOGEL

A HOT TRAIL

PAINTED BY CHARLES SCHREYVOGEL

PLAINS INDIANS PURSUED BY U. S. TROOPERS; MR. SCHREYVOGEL HAS PAINTED MANY FINE PICTURES OF INDIAN AND ARMY LIFE, HIS "MY BUNKIE" BEING THE MOST FAMOUS

AN OASIS IN THE BAD LANDS

COPYRIGHT E. S. CURTIS, SEATTLE

LUTA (RED HAWK), OGALALA SIOUX, AT A WATER HOLE IN THE BAD LANDS OF SOUTH DAKOTA. BORN IN 1854, THIS INDIAN LEADER PARTICIPATED IN MANY BATTLES WITH BLACKFEET, SHOSHONI AND OTHER TRIBESMEN. HE FOUGHT IN ENGAGEMENTS WITH U. S. TROOPS, AMONG THEM THE BATTLE AGAINST CUSTER IN 1876

BAD WEATHER IN APACHELAND

APACHES CAUGHT BY THE CAMERA IN THE MOUNTAINS JUST BEFORE THE BREAKING OF A STORM

COPYRIGHT E. S. CURTIS, SEATTLE

THE OLD WELL AT ACOMA

COPYRIGHT E. S. CURTIS, SEATTLE

HOPI WOMEN AT THE WELL ABOUT WHICH THEIR ANCIENT DWELLINGS ARE CLUSTERED. THE HOPIS, ALSO CALLED MOKIS, ARE PUEBLO, OR ADOBE-HOUSE-DWELLING INDIANS. THEIR PUEBLO IS IN ARIZONA

BAD WEATHER IN APACHELAND

APACHES CAUGHT BY THE CAMERA IN THE MOUNTAINS JUST BEFORE THE BREAKING OF A STORM

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THE OLD WELL AT ACOMA

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HOPI WOMEN AT THE WELL ABOUT WHICH THEIR ANCIENT DWELLINGS ARE CLUSTERED. THE HOPIS, ALSO CALLED MOKIS, ARE PUEBLO, OR ADOBE-HOUSE-DWELLING INDIANS. THEIR PUEBLO IS IN ARIZONA

THE CEREMONY OF THE SCALPS

PAINTED BY FREDERIC REMINGTON

RITUAL PLAYED A LARGE PART IN THE LIFE OF THE INDIAN; DANCES, SHAM BATTLES, TABLEAUX SYMBOLIC OF RELIGIOUS BELIEFS AND THE GREAT EVENTS OF LIFE WERE AMONG HIS CEREMONIALS

THE INDIAN AT HOME

PAINTED BY E. IRVING COUSE

THE INDIAN WAS NOT DEVOID OF HOME SPIRIT AS IS COMMONLY BELIEVED. THE PICTURE IS A REPRODUCTION OF E. IRVING COUSE'S "TWILIGHT"

THE END OF THE TRAIL

THE PASSING OF THE INDIAN OF YESTERDAY, ROAMER OF THE PLAINS, WARRIOR, HUNTER AND FREEMAN: THIS STATUE WAS WIDELY COMMENTED UPON AT THE PANAMA PACIFIC EXPOSITION AT SAN FRANCISCO. IT IS THE WORK OF JAMES EARLE FRASER

COLUMBUS CALLED THEM "INDIANS"

CHRISTOPHER COLUMBUS is responsible for the name, "Indian," which we still use, though his notion that the people he met were Asiatics scarcely survived his death. So far as we know, this was the first attempt to explain the origin of the American tribes, but some two or more centuries later, English colonial writers favored the idea that the Indians were descended from the lost tribes of Israel and one, Adair, has left us a splendid book on the subject. I say "splendid," not because his case is a good one, but because he was an investigator and gives us one of the best concrete early accounts of Indian life. In trying to show that the inmost tribal customs of the Indians were identical with those of ancient Israel, he quite naturally gathered the facts in great detail. This Biblical explanation was very popular among church people and appears to have been the prevailing view until well on into the nineteenth century.

ASIAN-AMERICAN TYPES

Tungus, Asia; Eskimo, Greenland; Blackfoot, North American Plains. Note resemblance in features, color of complexion and straight black hair

★ ★ ★

But with the increase of geographical knowledge, especially in Europe, men began to look at the population of the world as a whole and sought to read the origins of races in their bodily characters and the manner of their distribution over the earth. Since the map of the world makes it plain that even the most primitive of peoples could have easily crossed from Asia to America through Siberia and Alaska and that the great oceans that intervene elsewhere must have been insurmountable barriers for ages, thoughtful men everywhere have been brought to see that the only true neighbors the Indians could have had were the Siberians and the other Mongoloid peoples of Asia. And, further, the comparison of these peoples with the Indian, shows that they have certain characteristics in common and different from those of other peoples.

For example: straight black hair, round in cross-section, is universal among both and practically unknown elsewhere in the world. In popular speech the Indian is red, and so he frequently appeared when covered with his war paint, but in reality he is brown in skin tone, with a tendency for yellow tones to predominate over red. In some individual cases, it has proved well nigh impossible to distinguish between the body color of Japanese and Indians when side by side. In addition to these simple and obvious resemblances between Mongoloid peoples and Indians, there are anatomical similarities in the proportions of the face, the teeth, etc. There are resemblances in the structures of the body, inherited by one generation from the other, a process which we are sure has been going on for a very long time. The fact that all Indians, whether north or south, always have straight, black hair, can only mean that they have sprung from very remote ancestors and that their descent has remained pure. Hence, it follows that since such hair is found only among the immediate neighbors of the Indian in Asia, then these two peoples sprang from the same stock.

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This, then, is the most generally accepted explanation of the Indian. He is not a Chinaman, neither is he a Japanese. Yet, he is related to both in that a long time ago their original, common ancestry diverged, one division crossing over into America, the other settling in China. All this is conceived to have happened as far back as the stone age so that, for all practical purposes, the Indian stands as a distinct race. While, of course, this last statement cannot be proved absolutely, it is certainly the one that best fits the facts.

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The prevailing view is, then, that the Indian came here from Asia, a simple wandering hunter, split up into many tribal groups, each of which proceeded to work out its own solution as best it could.

—Dr. Clark Wissler, American Museum of Natural History

TWO HUNDRED KINDS OF INDIAN

THERE are over 200 different Indian tribes and languages. In North America alone, there are no less than 56 original language stocks, and, in each stock, many tribes. The following from Mr. Grinnell tells us something about the leading Indian stocks—what they were like. how they lived and where they lived.

ALGONQUIAN FAMILY

This family occupies more territory than any other North American stock. Its various tribes controlled land from North Carolina up to Labrador and from there westward through British America as far as the Rocky Mountains. Many of the tribes speaking Algonquian languages did not recognize their relationship and were often at war with each other. Their biggest fights, however, were with the famed Iroquois Indians whose territory lay east of the Great Lakes and on the St. Lawrence River. The encroachments of European settlers forced the Algonquians west as it did other Indians, so that tribe crowded on tribe and there was a general confusion of tongues and Indian races in the far West. The Algonquians stand high in intelligence, physique and manly qualities. Of the western Algonquians the most familiar are the Arapaho, the Blackfeet, and the Cheyenne, each of whom has some tradition of a migration from an eastern home.

Courtesy, American Museum of Natural History, New York

IN A HOPI VILLAGE
Southwestern United States

THE CADDOAN FAMILY

The best known tribe of Caddoan stock is the Pawnee, famous among book readers as having given a fine hero to the last volume of Cooper's "Leather Stocking Tales." The family comprises a great group of tribes living west of the Missouri River and ranging from what is now North Dakota south almost to the Gulf of Mexico. They came to the land where the Whites found them by migration from the Southwest, and their wanderings ended there. They lived in permanent houses made of earth or thatched with grass, and cultivated the soil. They were in the midst of the range of buffalo; elk, deer, antelope and turkeys abounded, and there were fish in the streams—so they lived well and easily. They made pottery of clay, spoons and dishes formed from the horns of buffalo and mountain sheep, knives from flint and bone, and piercing implements from horn, hoof and stone. The tribal names most familiar to us—Pawnee and Arikara — are derived from the word Pariki or Ariki, a horn; and refer to their old method of dressing the hair so that it stood up on either side of the head like two horns. The Pawnee were never hostile to the whites, though they warred at times with the Dakota and Cheyenne. They were home-loving and domestic—and extremely skilful in various ways. They performed feats of jugglery, some of which have never been explained.

THE SIOUAN FAMILY

The Siouan Family stock included a great number of tribes whose original home was on the Atlantic Coast, but who within a few hundred years moved westward until they finally reached the plains and the Rocky Mountains. Those we know best are the Sioux—a French-Canadian abbreviation of the Chippewa word *Nadowessi*, which means "snake." and hence "enemy." The best known, perhaps, of this family—because of the Indian wars of forty or fifty years ago—are the Dakota. The white settlers had much trouble with the

Dakotas and the United States Government was kept busy during the 60's and 70's trying to keep them in order. In 1862 there was an uprising of Indians in which 700 white settlers and 100 soldiers lost their lives. In 1867 these Sioux were moved out to southwest Dakota and a few years after came the expedition to the Black Hills under General Custer, and there followed a succession of hostilities that lasted for a number of years. The great tragic incident of these campaigns was the wiping out of the old Seventh Cavalry and the killing of General George A. Custer on the Little Big Horn (River) June 25, 1876. Sitting Bull was the political leader of the Sioux in this murderous engagement.

The Indians of this family have been divided into eight groups, of which the Dakota-Assiniboin is the most northern. Other groups include the Omaha, Ponka, Osage, Iowa, Winnebago, and the Crows. The various divisions of the Siouan family occupy territories that are entirely different and they have just as different methods of living.

ATHAPASCAN FAMILY

It is a far cry from where the Mackenzie River pours into the Arctic Ocean south to the parched deserts of Mexico and Arizona —from where live the Loucheux, the northernmost of the Athapascans, to the southernmost, the Apaches of the desert. In the northernmost section the fur-clad Athapascans live very much like their neighbors, the Eskimo. They spread their nets in the lakes and follow the caribou, the moose and, in ancient times, the musk-ox. In winter they travel on sledges drawn by dogs. Very different is the life of the Athapascan of the south—the Navajos, and the Apaches, the people of the desert. For many generations the Apaches made war on their neighbors, the simple, agricultural Pueblos, who, not being warriors, protected themselves by their watchfulness and by building homes way up in high places among the rocks, inaccessible to attack. The Navajos have long been renowned as blanket weavers, but it is thought that they borrowed that art from the Pueblos, who have, from time immemorial, woven cloth from cotton. The Apaches were very troublesome raiders in our southwestern country for years and our troops had much difficulty in cornering them and bringing them in. Now the Apaches have made great progress toward civilization, while the Navajos possess cattle, horses, great herds of sheep and goats, and have long been self-supporting.

THE MUSKOGI FAMILY

Among the tribes of this stock whose names are most familiar to us are the Creeks, Chocta, Chikasa, and Seminole. The Creeks gave us trouble a century ago, and the long struggle we had with the Seminoles in Florida is well remembered. Many of the Indians of Muskogi stock adapted themselves to civilization with surprising readiness, and for two or three generations past people of this stock have been known as the "Five Civilized Tribes." When they moved from their ancestral

Courtesy, American Museum of Natural History, New York

THIS IS HOW APACHES LIVE AND WORK

homes and settled together in Indian territory they continued the confederacy which had anciently existed, formed a government for themselves, and adopted civilized pursuits which brought them prosperity and general respect. In modern times the blood of the Five Civilized Tribes has become more or less changed by intermarriage with whites and with negroes.

People of this stock were among the first met by the Spaniards who entered Florida and endeavored to penetrate what is now the United States from the South. Panfilo de Narvaez met the Apalachee of Western Florida in 1528, and twelve or thirteen years later, De Soto passed through practically the whole of the territory occupied by the Muskogis.

The people of these tribes have a tradition that they came from some point west of the Mississippi River in what would be now Texas or Oklahoma. They are thought to be descendants of some of those early dwellers in the Mississippi valley who built the great mounds there. All these tribes support themselves very largely by agriculture and raise great crops of corn, beans, squash and tobacco. They have a highly developed religious system and also an extensive oral literature.

A POW WOW AMONG THE BLACKFEET
Three Guns White Calf is the Orator

IROQUOIAN FAMILY

The first explorers in the North found the Iroquois along the St. Lawrence River, and their range included part of Canada, most of New York, Pennsylvania and Ohio, and a portion of Virginia, Tennessee, North and South Carolina, and Georgia. The Five Nations—later Six Nations—so famous in the early history of the East were Iroquois, and their bravery and skill in war, and shrewdness in politics and statecraft gave them tremendous influence not only with the native population, but also with the English and French. Physically they were a splendid people, possessing a tremendous energy, bitter and cruel in war, but among their own people kindly, friendly, and helpful. It was the Iroquois who, before the coming of the whites in the north, about the middle of the sixteenth century, endeavored to establish the famous league which is known by their name and which was the first expression of a league intended to put an end to all war. It was a predecessor of our League of Nations.

All the Iroquois lived in permanent villages, in large houses, and they cultivated crops. The Five Nations were the Cayuga, Mohawk, Oneida, Onondaga, and Seneca, and to them was added later a sixth, the Tuscarora. The famous Hurons were Iroquois.

Among the Iroquois, descent was in the female line, and the women in the Iroquois settlements wielded a power and influence much greater than the men. They were the tribe's counselors and sometimes its chiefs. The half-breed children today of an Indian father and white mother are called by the Senecas "whites" and may not share in the tribal annuities or in the public affairs of the nation. On the other hand the children of a white father and an Indian mother are considered Indians and have all the rights and privileges of the Indians. In marriages between Indians of the different tribes the same rule holds, the child belonging to the tribe of its mother and not to that of its father.

The Iroquois that dwelt in Tennessee and in North Carolina lived essentially as did their northern relatives. They were farmers, built large houses, and fortified their villages—and were notably successful in agriculture.

WHAT'S IN AN INDIAN NAME?

INDIAN names are picture-names—Lone Tree, Gray Wolf, Laughing Water, Ghost-that-lies-in-the-Woods. The Indian's pictorial method of naming his offspring is one of the most characteristic things he does. The name may spring from a whim or a creed, from a totem or an adventure; the christening may occur when the child is young or when he is full grown. Often it commemorates something that happened to the papoose when he was still in swaddling clothes. When he is older he may take a new cognomen. Or perhaps he struggles along through childhood and youth with no name at all—just called the son of somebody, until one momentous day he has an accident or performs a deed that catches the imagination of his fellows and wins him a regular name of his own.

CHIEF RAIN-IN-THE-FACE
A mighty warrior of the noble Sioux nation

If you were a Sioux and couldn't think what to call your first-born, and nothing occurred to give a suggestion, you would probably name him "Chaska." If your first child were a girl, you would christen her "Winona"—the "Mary" of Indian sentiment. Until late years there were no family names among the Sioux. Government agents virtually founded families by inventing patronymics. Formerly, in a family of brothers and sisters, none bore the name of the father. Officials charged with enrolling Uncle Sam's foster children created surnames from paternal Christian names. The son of Shave Head is now identified as Charles Shave Head. John Boar's Face and Mary Red Thunder are his cousins. An Indian that has a horse of ruddy hue is often called Red Horse. Yellow Magpie probably looked on a strange bird. Bow-fast-to-his-body assuredly indicates preparedness, and Dust Maker—extreme speed.

Once there was a lad, upstanding and brave, who was called Jumping Badger. As he grew older and became a fearless and crafty fighter, his father summoned his friends to take part in the formal ceremony of transferring his name to his son, his pride and hope. The father's name was Sitting Bull. The heir to the name wrote himself into American history as the ruthless chief of the Dakotas who led his band of warriors against General Custer in the battle of Little Big Horn in 1879, and was killed by Government police while resisting arrest a number of years later.

James McLaughlin, former United States Indian Inspector, relates the incident that gave Rain-in-the-Face his famous appellation. The story goes that the baby was placed by his mother in the shade of a tree, "while she got ready the mid-day meal of her lord. The boy baby was strapped to a board, his small body embedded in the fuzz of cat-tails and wound about with the skin of a deer. As he looked at the sky and communed with the spirits of the other world, the thunder-bird settled in the limb of a nearby tree and a shower fell. The mother, engaged in her domestic work, forgot the child for a moment, and a neighbor ran in to tell her that it had rained in the face of her baby. The mother seized the strapped youngster and bore him into the tent, chattering endearments, and wiped the moisture from the face of the little round-eyed baby with the palm of her brown hand. The father of the child looked up from his reclining-place, and said: 'It is a sign. Let him be called Rain-in-the-Face.' The soft syllables in which the name of the child was pronounced sounded good to the mother, and the father, proud of his inventive inspiration, proclaimed the boy's name and made a feast. Thus, it was that so trivial a thing as a summer shower gave to a chief of the Sioux his name."

INDIAN LIFE THROUGH THE LENS

FOR a quarter of a century, Edward Curtis, student and photographer, has been recording the life and history of the American Indian. As a youth he began to make photographs that were bits of real life transcribed to the plate. Curtis used to spend his holidays roaming the picturesque Puget Sound country with his camera as companion. His negatives portrayed the squat natives of the Pacific Coast, or their taller, more prepossessing brothers on the other side of the mountains.

As he came to understand their primitive ways, the young man often found himself sitting by their fires, joining in their adventures, and sleeping under their lodge poles. Everywhere he went he gathered fragments of Indian lore and studied the Indian nature. His own mind, sensitive as a negative to impressions and details, stored up knowledge that, augmented year by year, became the basis of the great work he is now engaged in.

EDWARD S. CURTIS

To this calm-eyed wanderer with the magic box, the Indians of the Sound, of the coast islands and the plains, betrayed mysteries of the ritual dance, of family life and secret fraternity. And always Curtis made pictures—and more pictures. In his shop in Seattle, where he was established as a portrait photographer, he sold prints of these spiritual, beautifully handled pictures of the Indian in camp and on the trail. Magazine reproductions brought him inquiries from men of affairs. Theodore Roosevelt was one that early recognized the extraordinary worth of what Curtis was doing for America. "He has done what no other man ever has done; what no other man could do," he said.

In 1898 Mr. Roosevelt interested the late J. Pierpont Morgan in this unique picture chronicle. As a result, a fund of $75,000 was placed at Curtis' disposal to finance a permanent memorial of the American Indian, based on the Curtis photographs and his written story. Since that time Mr. Curtis has spent a great part of his days "in the field," braving winter's storms and summer's heat, living in crude villages, tramping rough and sometimes perilous trails, with the single aim of "picturing all features of the Indian life and environment—types of the young and the old, with their habitations, industries, ceremonies, games, and everyday customs . . . showing what actually exists or has recently existed (for many of the subjects have already passed forever)."

The publishers' plans call for twenty luxurious volumes of text and twenty portfolios of photogravures to be issued under the title, "The North American Indian." Eleven volumes have already appeared and one is just ready.

Mr. Curtis has an ardent admirer in Mr. George Bird Grinnell, who declares that he has "never seen pictures relating to Indians which for fidelity to nature, combined with artistic feeling, can compare with these pictures by Curtis. Today they are of high scientific and artistic value. What will they be a hundred years from now, when the Indians shall have utterly vanished from the face of the earth? To accomplish his work the artist has exchanged ease, comfort and home life for the hardest kind of work, the wearing toil of travel, and finally the heart-breaking struggle of winning over to his purpose primitive men."

Mr. Curtis has put the nation in his debt by chronicling by pen and picture the manners of America's first settlers. His photo-history of the North American Indian is, in form and spirit, the most enduring contribution made to the ethnology of the continent.

—Ruth Kedzie Wood

AFTER THE WHITE HOUSE—WHAT?

WHAT shall we do with our ex-presidents? This question comes up regularly in the United States following presidential elections. History shows that some of the ablest national leaders have left the White House impoverished by their devotion to public affairs. From time to time efforts have been made to provide the retiring executive with a pension or some other form of income. These plans, however, have never passed the stage of discussion.

Five of our 27 presidents have died in office. The average life of the rest, after quitting the presidential chair, was 13 years. Two only held office after leaving the White House—John Quincy Adams and Andrew Johnson; the former became a senator from Massachusetts, the latter a senator from Tennessee nine years after ending his term as president. John Tyler became a member of the Confederate Congress, but died before it convened.

Grover Cleveland was the only president to return to the White House after retirement. Andrew Jackson, Martin Van Buren, and Roosevelt sought to and failed.

Martin Van Buren lived the longest of any ex-president—31 years. John Adams and James Madison lived 25 and 27 years respectively.

John Adams lived long enough to see his son, John Quincy Adams, elected to the highest office; the son had been in office 15 months when his father died, July 4, 1826, at 90 years of age. Thomas Jefferson died the same day; he had been president 17 years before.

Benjamin Harrison's grandfather, "Tippecanoe" Harrison, died in 1841, one month after he was inaugurated.

Misfortune seemed to follow General Grant from the moment he stepped out of the office—financial losses, illness and death.

Following is a record of ex-presidents:

Washington served as commander-in-chief of the army in 1797.

Adams practised law at Quincy, Mass.

Jefferson refused a third term and devoted the remainder of his life to educational work.

Madison became a gentleman farmer and was a delegate to a constitutional conference.

Monroe became a regent of the University of Virginia, but suffered great financial distress and was enabled to die in peace only after Congress had voted him a gift.

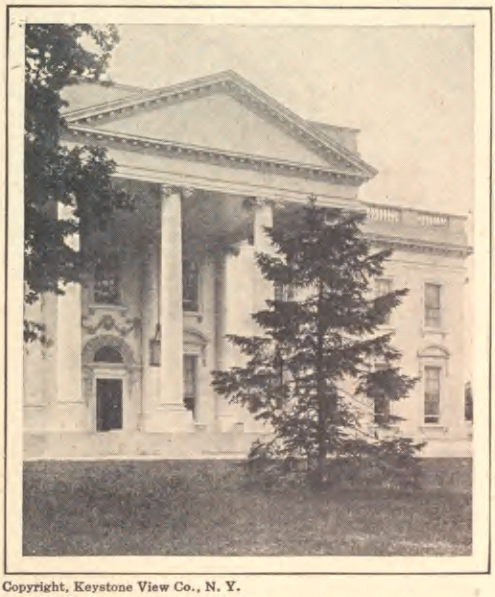
John Quincy Adams served in the House of Representatives after being President.

Andrew Jackson lived in retirement.

Martin Van Buren failed in his effort for renomination in 1848 four years after ending his term.

Polk retired to his home at Nashville, Tenn. Taylor died in office. Fillmore failed to win renomination in 1856 and retired.

Pierce retired after failing to win renomination. Buchanan retired. Lincoln was assassinated in office. Johnson completed his term in 1869 and was elected senator in 1875. Hayes occupied himself with educational work until his death. Garfield was assassinated in office. Arthur failed to win renomination and retired. Cleveland practised law in New York City; was re-elected in 1892, and lectured at Princeton University after completing his second term. Harrison practised law, wrote and served as a commissioner in the Venezuela boundary dispute settlement. McKinley was assassinated in office. Roosevelt hunted in Africa, wrote, traveled, explored and participated in public affairs until his death. Taft became a member of the faculty at Yale University.—*Guy Pearce*



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THE MAIN PORTAL OF THE WHITE HOUSE
Washington, D. C.

NEW FACES FOR OLD

THE use of masks in the ancient theater has recently been recalled in vivid fashion by the artistic success of Mr. W. T. Benda's remarkable modeled faces. Mr. Benda is primarily an illustrator. His name and his work are familiar to us through frequent appearance in books and magazines. He came to America from Poland, and quickly made his mark, as we may say, with brush and crayon. His studio is above the green rectangle of Gramercy Park, in one of the storied sections of old New York. A visitor from The Mentor, chancing to call on Mr. Benda not long ago, discovered, hanging on ornamental screens and against Chinese wall coverings, a variety of masks, some weird and dragon-like, some of a distracting beauty, all executed by an artist's practised hand.

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MR. BENDA'S "GALLERY OF MASKS"

The Mentor scented a serious-minded revival of an age-old craft, but Mr. Benda laughed at the suggestion. "I made the first mask several years ago, when I was asked to a *bal masque* and needed a disguise. Just for fun I made my own mask, out of paper, and after an informal method of my own. I wore the mask to the party and it was so different and characteristic that all my friends commented on it and wanted me to work out the idea further. So I experimented with my new plaything, and this"—with a gesture—"is the result. These are my paper children."

He took one of the masks from the wall —the face of a maiden fair. "And here is the germ from which they spring." He produced from a cabinet some bits of pasteboard, cut and glued, with strips of brown paper put on in knowing layers. "Here is the base, the frame of the face. The features are built of paper laid on in varying depths, and cut and trimmed with a sharp blade. Afterwards they are tinted and properly preserved on the inside with lacquer. When a headdress is painted, or contrived from bits of lace and silk, the effect is really life-like."

To demonstrate the truth of the last statement, the artist put on a silk robe and adjusted the mask of the Beautiful Lady. A simpering gait and delicate movement of the head completed the illusion. When he donned the face of the Foolish One, the transformation was equally diverting. A mask of parchment color, decorated in Oriental designs, suggested the Chinese theater.

Mr. Benda's originality and skill as an artist serve him so well in the construction and decoration of these facial facsimiles that his fame bids fair to reach across the continent and to foreign shores, as the creator of a new art.

Yet it is an art that Greek tragedians were acquainted with long before the time of Christ. The most celebrated Roman actor of his time, Roscius by name, who taught Cicero the art of oratory, had a squint. Some say that was the reason he adopted the Greek mask. There was outcry against the innovation because it was thought illegitimate to seek artificial aids to the expression of emotion. But Roscius answered the uproar by giving orders for a whole set of tragic masks, and wearing them regularly. After awhile the people got accustomed to the idea, and it became a fixed custom for Roman actors to assume female faces when acting female parts. Disguise by means of cosmetics, or "make-up," was not perfected then as now. A grotesque, large-mouthed type of mask was used by

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MAKING THE PASTEBOARD FRAME

actors who played the characters of slaves, old men, comedians. Natural types were used to represent women and young men. Weak-voiced actors sometimes had masks fitted with metal mouth-pieces to increase the carrying power of their words.

Masks have been used in Japan for unnumbered centuries. Sometimes they are of immense size. Special designs, such as the *Koinshu* (a large mask, red nose, yellow eyes, hair covered head), are reserved for one traditional group of dancers. In rites of sacred import masks are made of white silk or paper painted with colored ink. This is the kind worn by temple priests, so that their breath will not pollute the sacred offerings.

Travelers in Polynesia and Alaska witness strange dances performed by natives whose faces are covered by the heads of animals and uncanny creatures that have symbolic importance. In a chief's house, in an Alaskan Indian village, rows of garishly painted and elaborately carved head-pieces hang on the wall for the use of dancers that gather to take part in superstitious ceremonials.

Many tribes of American Indians keep alive dances in which the participants wear masks of legendary design, handed down from one generation to another. A stocky brown-skin of the Northwest, that does nothing more ferocious during the rest of his days than go fishing or hunting, becomes at the annual feast an outlandish creature with furry coat and terrifying head-covering, who, in company with other fantastic beings, goes through steps and motions consecrated to religion and superstition.

On the plains of Dakota, and in the Southwest, Indian mummers, assuming the heads of buffalo, perform a dance that is a prayer to the God of the Chase. The myth dances of the Pueblo Indians are performed in underground lodges, "jealously guarded from profane eyes. . . . The War Captain's men keep watch at every road so that no outsider can glimpse the masked dancers impersonating gods." The Eagle Dance, and similar animal dances, frequently demand exhausting and exhaustive mimicry. All the dancers wear head-dresses, realistically painted and carved.

"The Zuñis of New Mexico," says an author, describing these ancient people, founders of the oldest town in America, "have nearly two hundred gods and mythological characters that are impersonated by distinctively masked and costumed dancers."

Masks had no part on the American stage before the season of 1920, when they were effectively used by a young woman dancer in a super-spectacle produced in New York. Mr. Benda has recently completed a set of character masks for a London review. The Polish artist's creations have shown us how delightful an accessory they may be to the art of the pantomimist.

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THE ARTIST MASKED

PHANTOMS THAT HELP AND HARM

SEEING things, not as they are, but as they seem to be, is a common experience on the desert. The word mirage comes from the French "to gaze"—*mirer*. Across the quivering sands, when the sun is high, the traveler beholds the horizon as a green shore, laved by thirst-quenching waters, and shaded by lofty palms. Fiction writers have utilized the situation times without number. Their readers readily react to the emotion of wayworn, panting human creatures deluded by these taunting mockeries.

History is full of sensational episodes in which a mirage has appeared to confound warriors and explorers. When Napoleon invaded Egypt in 1798, his army was deceived by the sight of a great pool of water in which villages and cool shadows were reflected. When approached, the borders of the lake retreated and vanished, and the groups of trees and sheltering huts dissolved into air. Monge, "one of the learned men attached to the expedition," offered the parched troops a plausible explanation of the illusion, based on his scientific knowledge of optics, but the sun-beaten soldiers railed at Nature's ironic jest, especially as the refreshing vision continued to appear all during their march across a scorching plain.

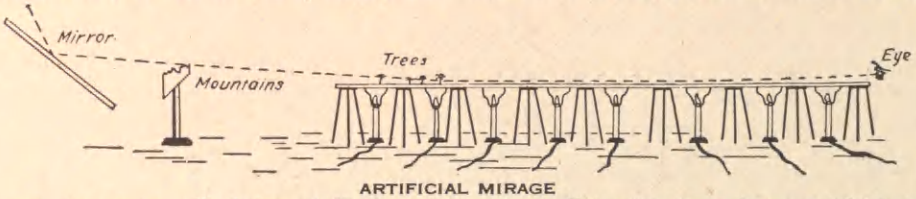
In a laboratory at Johns Hopkins University, Baltimore, an apparatus has been constructed to make clear the phenomenon of the mirage. A number of sanded boards, mounted on tripods, are so arranged in relation to a slanting mirror that a reflection of the sky meets the level of the surface. In front of the mirror a pasteboard range of peaks is mounted so as to come between the light from the sky and the sanded plain. Heat like that of the desert is produced by a row of gas jets. As the heat intensifies, the observer, directing his eye on a line slightly above the surface, perceives the image of a shining body of water (the still blue of the sky) and a row of mountains turned upside down.

The physical cause is simple. The rays of light from the hotter, and consequently thinner atmosphere near the surface, pass to the cooler, denser air above. The optical principle involved is one of refraction and reflection (bending rays and throwing back rays). Rays of light from a distant scene or object, placed in the denser medium, a little above the level of the earth, and coming in a direction nearly parallel to the earth's surface, meet the rarer medium at a wide angle. Instead of passing into the rarer medium they are reflected back to the dense medium of the upper layer of air. The common surface of the two mediums acts as a mirror. The picture of faraway hills or trees or buildings is seen inverted, just as we see an image topside down on the surface of a lake.

The spectacle of a mirage at sea is haunting and unforgettable. There is a ghostly tale that comes down to us from Colonial days of a ship whose clear image was seen floating in space after a violent storm. The vessel was due in New York on the following day, but it never came to port.

Natives of southern Spain frequently see the peaks of the Sierra Nevada Mountains suspended like snowy pendants above the deep blue waters of the Mediterranean. Most dumbfounding of these narratives is the statement of a traveler that he saw from the highest summit of the Canary Islands a "looming" upright mirage of the Alleghany Mountains in North America, three thousand miles away.

A remarkable latter-day mirage was the one seen by Robert E. Peary, in June, 1906, while exploring in the Far North. He was so sure that the vision was earthly that he named the "distant land above the ice horizon," Crocker Land. In 1915, Donald B. MacMillan and members of his Expedition set out to determine whether or not Peary had actually seen a far-off coast or an atmospheric illusion. In his book, "In Search of a New Land," Mr. MacMillan



ARTIFICIAL MIRAGE

With this apparatus, constructed by Professor R. W. Wood, of Johns Hopkins University, mirage effects are artificially produced

A MIRAGE IN THE DESERT

gives the following description of the fantasy that lured him to the Arctic.

"April 21st was a beautiful day; all mist was gone, the clear blue of the sky extending down to the very horizon. . . . Great heavens, what a land! Hills, valleys, snow-capped peaks extending through at least 120 degrees of the horizon! . . . As we proceeded, it gradually changed its appearance and varied in extent with the swinging around of the sun, finally at night disappearing altogether.

"The 27th, on which day we marched from igloo No. 5 to No. 3, offered the same perfect weather and perfect going, all leads being frozen. Throughout the day the mirage of the sea ice, resembling in every particular an immense land, seemed to be mocking us. It seemed so near and so easily attainable, if we would only turn back."

On another day the explorer's diary carried the record, "The day was exceptionally clear, not a cloud or a trace of mist; if land could ever be seen, it could be now. Yes, there it was; it could be seen even without a glass, extending from southwest true to north-northeast. Our powerful glasses, however, brought out more clearly the dark background in contrast with the white, the whole resembling hills, valleys, and snow-capped peaks." Here was a notable instance of the magnified "looming" reflection that sometimes arises where currents of warm air pass over snow fields or icy waters.

A familiar apparition off the southern coast of Italy is the Fata Morgana. In medieval romance, the *fata*, or fairy, Morgana was the sister of King Arthur, and to her witchery the Italians of Naples and Sicily ascribe the mirage frequently seen in the Strait of Messina. "Fata Morgana," we are told, "is of frequent occurrence in the polar regions in the vicinity of distant floating ice rafts. Scott and Mawson noted this form of mirage on the ice field of the great Antarctic continent where crevasses or cracks appear in the ice. Warm air, rising from these cracks into cold air, raises points of ice only a foot or two high into battlements with castellated towers."

A mirage renowned in the annals of explorers revealed to Captain Robert Scott and his companions, in the Antarctic, an extent of coast line, seventy miles long, that they had no other means of seeing. This instance is proof that the phenomenon is not always a delusion and a snare, but may assist in determining such definite and substantial matters as geography and exploration.

THE OPEN LETTER

For years we have been told that "the only good Indian is a dead one." We have accepted it as a fact, for the statement usually came from someone that claimed to know the Indian. But no one living knows more about the American Indian than Mr. Grinnell, and he tells us that the Redman is "simple, honest, and, when one gets to know him, very likeable." Mr. Grinnell has lived in close association with Indians for half a century, so his statements concerning their character may be taken as gospel truth. Mr. Grinnell was, for a number of years, chief of the Piegan Blackfeet. His Blackfoot name is "Fisher Hat"; and the Cheyennes gave him a name meaning "Bird"; the Pawnees called him "White Wolf," and the Gros Ventres named him "Gray Clothes." He began his life in the West as a naturalist, with General Custer in the Black Hills, and afterwards with Ludlow in Yellowstone Park. He was editor of *Forest and Stream* for years, and has written many books on Indian life. It is worth something, therefore, to have his assurance that the Indian is, in all respects, much like the average human being, and has many of the same good qualities. On the strength of Mr. Grinnell's statement, let us sponge out the old cynical comment on Indian character.

THE COMING OF THE WHITE MAN
Statue Group by Herman MacNeil, in City Park, Portland, Oregon

★ ★ ★

It is a custom nowadays to quote the Indian office of the Interior Department to the effect that our Indian population is growing. There are statements to that effect in the "Handbook of Indian Tribes" issued by the Bureau of Ethnology in Washington. When I asked Mr. Grinnell if this was true, he said that he did not think so. "The Indian Bureau," he says, "counts the mixed bloods as Indians, and, in that way, makes a showing of a stationary, or slightly increased, Indian population. As a matter of fact, the Indians—by which I mean the full-blooded Indians—are steadily growing less, I think.

"James Mooney, in the Handbook, estimates the total number of Indians in North America north of Mexico at the time of the discovery, as 1,150,000. I have never been able to bring myself to believe that they were so few, and do not believe so now.

"In 1910 the census showed that, in Canada, there were more than 110,000 Indians and, in the United States, 320,000, including the mixed bloods. Of these mixed bloods there are many. An authority estimated in 1879 that there were then 40,000. I suppose that number has very considerably increased, for the mixed bloods are prolific and adaptable.

"On the other hand, it must be said that, in many tribes, the Indians have passed through the difficult transition from a life that was wandering to one that is sedentary—from one where flesh meat was the chief support, to one where vegetable food is the main subsistence; or, in other words, from the life of a hunter to that of a farmer.

"The Northern Cheyennes have for a dozen or twenty years been nearly stationary. There was a gain of five or six or ten a year for several years, and then along came the influenza, which caused sixty or seventy unusual deaths in one winter. These people, however, are more or less at a distance from settlements and their blood has not mingled to any great extent with that of the whites. There are among them very few half-breeds."

From what Mr. Grinnell tells us it seems, then, that if "Mr. Lo" is coming back in numbers, it is only by virtue of intermarriage with the sisters or the daughters of his "pale-faced brother." The tribes of the pure-blood Redman remain about the same or are slowly passing away.

The fate of the Indian in the United States is absorption into the white race; and the ultimate American, when he emerges from the melting pot, will have in his veins a strain of original American blood.

W. D. Moffat

EDITOR

But One Person in Ten Thousand Knows Both Sides of the Story of The Tragedy of the Ages

The Irish problem started nearly 4000 years ago. During this time more lives have been sacrificed in the cause than were lost in the World War. It is today the most pressing human problem. In the book recently published

IRELAND AND ENGLAND

By EDWARD W. TURNER

is given an impartial, unbiased story of the great struggle that has recently developed into one of world-wide interest. It is more fascinating than the most absorbing novel—unfolding page after page of facts presented in such interesting form that you will be held spellbound. But one person in ten thousand knows both sides of this great question. Ireland has her side—England has hers—your sympathies are with one or the other—but do you know both sides of the case?

Has Ireland ever demonstrated that she could rule herself?
Who started the Sein Fein movement?
Why has the Irish question created one of the most formidable obstacles to complete good relations between the English speaking peoples?
Will Sein Fein fail?
Will Ireland finally draw closer to Great Britain in real friendship?
Why cannot Great Britain with respect to her own proper interests permit Ireland to effect separation and be independent?
Is it really true that economic ties bind England and Ireland?
What was the now world famous Easter Rebellion?

IRELAND AND ENGLAND

gives you the facts from the earliest time to the present day. Read about the privations—the struggles—and the successes in this fascinating volume.

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British and Irish propagandists throng the United States. Hundreds have written, thousands have spoken on the Irish question. Writers and speakers have been bitterly partisan. As an intelligent person, you realize the importance of knowing both sides of the question. To form an opinion of your own it is necessary to have an unbiased record of fact.

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THE STRENGTH OF SINN FEIN

For the first time in years, the Irish farmer is prosperous. The war sent food prices soaring and England consumed everything he could raise. Southern Ireland, the home of Sinn Fein, is dotted with farms like the one pictured above.

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VOL. 9 SERIAL NUMBER 218 No. 3

IRELAND TODAY

By E. M. NEWMAN

Travel Lecturer

Illustrations in this article—except those with special lines of credit—are reproductions of photographs made by Mr. Newman during his visit to Ireland.

"DON'T go to Ireland unless you want to be shot by the Black and Tans or ambushed and assassinated by the Sinn Fein," was the advice given me by officials and friends when I started from London to Erin. But I went to Ireland solely as a spectator, and I felt that as long as I maintained that attitude I was safe.

My first difficulty was to gain admission into Dublin Castle, which today is the headquarters of the British Army. After a wait of several days, and much red tape, I was finally ushered into the presence of Colonel Wilson, chief of the Intelligence Department. He apologized to me for keeping his hands in his pockets while talking, and explained that his hands were on his automatic pistols as a measure of precaution. Both of his predecessors had been shot down, and as he was a man of family he did not want to take any more chances than were necessary. Ten days later he was killed, in broad daylight.

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Colonel Wilson gave me a British military pass and, to make my own neutrality doubly sure, I called on Mr. Arthur Griffith, acting President of the Irish Republic, explained to him the purpose of my visit, and asked him to give me Sinn Fein credentials so that I might travel about at will. There was no hesitancy on his part in providing me with the necessary letter, and then, fully armed with my cameras, I was ready for my journey.

CONDITIONS IN DUBLIN

I was amazed to find Dublin apparently calm and peaceful. It was only after several days that I began to sense the feeling of tenseness, the extreme nervousness of the people.

One day I was walking through the streets of the Irish capital when, like a bolt from a blue sky, a shot rang out. People, running from all directions, began to gather, and before I fairly realized that something had happened, motor-lorries filled with troops appeared on the scene. Machine-guns were turned on the crowd,

volleys of rifle shots were poured into the struggling mob which was growing larger every moment. Many dropped, some killed and a number wounded. Finally, the streets were cleared, order was restored, the people returned to their homes, the troops to their quarters, and the riot ended as suddenly as it began. These are the unlooked-for things that happen at the most unexpected times and in places where one might think that such an occurrence was impossible.

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TENSE DAYS IN ERIN

Even an American ship is not immune from British military control. An English soldier prevents passengers leaving this liner at Queenstown while search is being made for President De Valera, of the Irish Republic, who recently visited the United States

Conditions generally are chaotic. Dublin Castle is today an armed fort, closely guarded, day and night, by a strong cordon of troops, while around its walls are barbed wire entanglements. At the entrance to the Bank of Ireland armed sentries pace to and fro. All mail is sent through the streets accompanied by a strong guard, the soldiers wearing steel helmets just as they did at the front.

At night the streets of the city are patrolled by troops and armored cars. Dublin has a curfew law, and anyone found upon the streets after midnight, unless provided with a military pass, is arrested. Conditions in the south are far worse; in such towns as Tipperary, Fermoy and Cork, now under martial law, nine o'clock at night was the dead line when I was there—after that hour the inhabitants were required to be in their homes or suffer imprisonment. Where these laws are in effect, a challenge to halt must be instantly obeyed, as the soldiers are instructed to shoot anyone that disregards orders.

LOOTING AND BURNING

Every police station in Ireland is today a fort. In place of glass in the windows there is sheet steel with loopholes for rifles. The entrance is protected by barbed wire and all the police, in addition to their revolvers, are armed with rifles. More than five hundred police-barracks have been burned to the ground and the stations have time and again been subjected to attacks.

Terror is added to the unsettled conditions by the numerous conflagrations which have destroyed many homes and millions of dollars' worth

of property. In Cork, the best part of the business district has been wiped out by incendiary fires; enormous damage has also been inflicted in such cities as Belfast, Londonderry, Balbriggan and other places. While much of the damage may be attributed to the action of the mob, considerable looting, sacking and burning has been done in reprisal for outrages committed. Recently the Honorable Under-Secretary for Ireland, in the House of Commons, justified reprisals taken by troops upon inhabitants of villages where outrages were committed.

KILLED IN THE NEW "WAR"

Colonel Wilson (center) lived with his pistols in his hands. Despite his caution, he was killed ten days after this picture of the British military staff was taken at Dublin Castle

Such a contention brings up the question whether two wrongs can make a right. Crime cannot be condoned, of course, but whether the innocent should suffer for the guilty is another matter. There may be justification for dire punishment of the perpetrators of some of the dastardly murders that have been committed in Ireland, but because a soldier is killed from ambush, should the entire population of a village be punished? Many of the best English journals have condemned reprisals of this kind, and between contradiction, denial and condemnation, the question is still in abeyance.

In such cities as Londonderry and Belfast, I saw sand bag barricades erected by the soldiers, in the principal business thoroughfares. Using these as breastworks, the troops poured a steady fire into riotous crowds that fought for days. Hospitals were filled with the wounded, business was practically suspended for days, and when order was finally restored, the ugly scars told mutely the story of

A GOVERNMENT UNDER ARMS

Mail truck ready to start (upper) and part of the Dublin Castle armored car patrol

depredations. Wrecked shops, looted stores, burned buildings, all testified to the reign of terror that is shaking the country to its very foundations.

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A COMMON SIGHT NOW

Relatives of Sinn Feiners outside of Mount Joy prison, Dublin, where political offenders are imprisoned

PROSPEROUS FARMERS

In striking contrast to the turmoil in the congested centers, the Irish farmer lives in peace and quiet. He has never been more prosperous, his vegetables bring three and four times as much as in pre-war years, and for little pigs, four and five English pounds each is an average price. As a result, the shack has given way to pretty little thatched-roof cottages, which, today, like sunspots, dot the landscape. These flower-encircled homes are an evidence of a new era in the life of the Irish farmer. Where formerly the cart was the favorite vehicle of the peasant,—the motive power a donkey, last summer I saw upon many of the farms a little "Henry." So great is the demand for Ford cars that an assembling plant has been built near Cork.

The rollicking good nature of the Irish farmer, his wit and hospitality, is what endears Ireland to the visitor. Eager at all times to extend a hearty welcome to the guest from the United States, it is seldom that one enters a cottage without finding someone who has either a brother or a relative, who is an alderman, mayor or congressman in some city in the United States. The Irishman is thoroughly familiar with our country; next to Erin, which to him is "just a little bit of Paradise," he loves America better than any other place.

"SOMEWHERE IN BELFAST"

British infantrymen barricaded behind sandbags during street rioting

SCENIC BEAUTY

As a relief from the shocking scenes of riot, murder and destruction, in the cities, one turns gladly to the lovely romantic spots in the country.

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"BLACK AND TANS" GUARDING SINN FEIN PRISONERS

Royal Irish Constabulary. Ex-army men were recruited and wore their light uniforms with the black tam-o'shanters of the Constabulary; hence the name

Such scenic gems as the Lakes of Killarney, the River Shannon, Ballybunnion, the Giant's Causeway and the Golden Vale of Tipperary have few rivals for beauty. A copious rainfall carpets the land with velvety green, clothes the ruins with ivy and adorns the country with a floral mantle.

Blending romance with legend and fairy tale, the people of Ireland associate with all of their beauty spots fantastic stories of colleens, giants and tales of the O'Donoghue. These lend added interest to places made beautiful by the bounty of nature. In visiting Ireland today, it is well to turn one's face away for a time from the tragic drama of the city streets and dwell on some of the more pleasing things to be seen.

One of the most recent and important industries in Ireland is the co-operative creamery, which is springing up in every part of the country. This, the result of the life-work of Sir Horace Plunkett, has been a boon to the Irish farmer. Wherever a creamery has been built, the farmers for miles around come every day with their little carts to have the cream separated from the milk. The farmer pays a percentage of the cream obtained for the process of separation. A deplorable destruction of these creameries by Crown Forces has taken place, as reprisal for outrages committed. More than fifty creameries have been burned and enormous damage has been inflicted upon the farmers, most of whom are admittedly innocent of wrong-doing; they are being made to suffer because of the acts of others.

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DUBLIN UNDER MARTIAL RULE

British soldiers holding back crowd while the offices of a newspaper are searched

SOME IRISH INDUSTRIES

Famous for its lace, some of which is as delicate as the web woven by a spider, Ireland confines this industry to the convents, where the Sisters teach orphan girls how to use a needle. So deft have they become that Irish lace is eagerly sought by lovers of delicate handiwork the world over.

Lace began to be a real Irish industry in 1829 and 1830, and the first active lace centers were Limerick and Carrickmacross. County Cork is famous for needlepoint in the style of the seventeenth century. This particular Irish Point Lace industry has an interesting story, which I give in full:

"In 1847, when famine was raging in Ireland and the English Government refused to help the starving people, a nun in the Presentation Convent, Youghal, tried to think of some way by which she could alleviate the awful misery of the poor people. She had in her possession a piece of foreign lace made in Italy. Slowly and carefully she picked out the stitches to learn the process by which the lace was made. She then tried to remake the lace and found to her great joy that she could reproduce it exactly. She immediately taught it to a number of young girls, who soon became very proficient. With these girls the good nun formed a regular school of lace-making. The money earned was a great boon to the starving people. The school continued to prosper and to this day turns out exquisite lace."

IN THE BATTLE AREA; SEARCHING A RESIDENT

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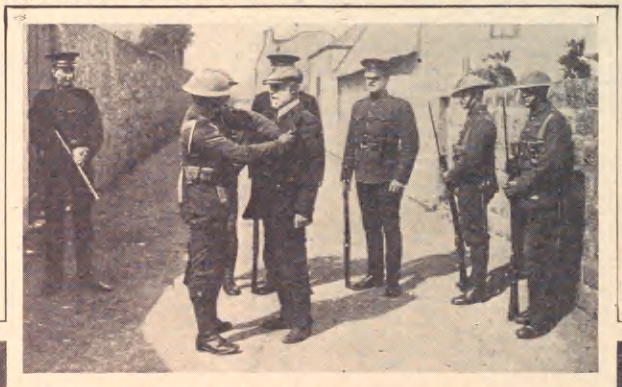

(BELOW)
BELFAST. BARRICADES AND WRECKED SHOPS IN BUSINESS DISTRICT

(BELOW)
WINDOWS SMASHED AND STOCKS SCATTERED IN BELFAST RIOTING

PATRICK STREET, CORK, RUINED BY FIRES RESULTING FROM WARFARE ON SINN FEINERS. THE LOWER PICTURE SHOWS THE RUINS OF THE BUILDING ON THE RIGHT SIDE OF THIS STREET

POST OFFICE, CORK, GUTTED BY FIRE THAT SWEPT CITY FOLLOWING RIOTS. THE BUILDING IS BUT A SHELL AS CAN BE SEEN THROUGH THE WINDOWS

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BLACK AND TANS GUARDING CORK RUINS

In recent years Irish horses have captured the great races run in England and France. Last year the Grand Prix in Paris and the Derby in England were won by Irish-bred horses. At Curragh on the farm of Mr. Parkinson, the well-known horse-trainer, is Bellsize, an unbeaten two-year-old, valued at one hundred thousand dollars. On the same farm is a horse belonging to His Highness, the Rajah of Cashmir, purchased for five hundred dollars, now valued at forty thousand dollars. The breeding and training of horses is one of the important Irish industries.

Bogfields are found in every part of Ireland. They are purchased just as are farms. The turf in the boglands is cut into brick-shaped blocks by a sort of spade called a "slane." Then these blocks are stacked in piles and dried by the sun. The turf is known as "peat" and is burned as fuel. It is sometimes referred to as "Irish coal." Gathering and selling it is an important business.

COMMERCIAL CENTERS

A tour through Ireland takes one to a number of big, busy commercial cities and towns. Limerick, on the river Shannon, is not only a most picturesque old town, but is an active commercial center, celebrated for its bacon, famous for its lace, and noted for its pretty women. Limerick has historic interest as the scene of the famous—or infamous—"broken treaty," which is referred to elsewhere in this number; the stone, now known as "the stone of the broken

treaty," is set up as a historic monument on the bridge at Limerick.

While the greatest industries, such as shipbuilding and linen, are in the north of Ireland, the richest agricultural district is in the south. Commercially, Belfast is the metropolis of the island; its wealth is far greater than that of any other city. It is essentially a business city, while the capital, Dublin, retains the distinction of being the most beautiful city of Ireland. There is great rivalry between the north and the south. To understand conditions and know Ireland one must be familiar with the fact that the south is Irish to the core, while in the north, or in the so-called Ulster Counties, there are many Scots.

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HOMELESS

Irish refugees leaving the ruins of a home destroyed by fire

STREET SCENE IN LONDONDERRY

A political tragedy—down there a man has just been killed

WIRE ENTANGLEMENTS ON A BELFAST STREET

RELIGIOUS AND POLITICAL CONDITIONS

Differences in religious belief has divided the country as much if not more than any other factor. Most of the Orangemen, or Protestants, live in the northern counties, while the south is almost entirely Roman Catholic. The stronghold of the Sinn Fein movement is in the south, while most of those opposed to Home Rule live in the north. Sinn Fein, translated from Gaelic into English, means "we ourselves," or, in other words, a Sinn Feiner (pronounced as if spelled Shin Faner) is one who believes in Ireland for the Irish, and is naturally a Home Ruler.

A BRITISH OUTPOST

Police barracks throughout the country have been converted into forts. This one, at Ballybunnion, is steel sheathed and loop-holed for rifle firing

It is not a new problem that confronts the Irish. For centuries they have been struggling for freedom. As to the measure and extent of that freedom there are varying degrees of opinion and conviction today. Some want a Republic of their own; others would be content with an autonomous Government.

There must be some way out of the deplorable state of affairs in which Ireland now finds itself. Surely there is some compromise possible which will effectually do away with the needless sacrifice of human life and property on the smiling Isle of Erin. Too long has murder and reprisal gone on in a country otherwise blessed with beauty and opportunity.

I went to Ireland with an open mind, with no other purpose than to report conditions as I actually found them. I photographed what I saw—and much of what I saw was shocking and deplorable. It is a pitiful thing to see men so wrought up that, literally speaking, their hands are on their guns all the time. The slightest provocation furnishes an excuse for murder and arson. Never in all my experience have I seen men so roused to anger as those fighting in the streets of Belfast. Wire entanglements were to be met at points on the main streets, and machine gun corps crouched in protected cor-

HARVESTING A PEAT BOG

FIFTY OF THESE DESTROYED

A co-operative creamery of the kind that is banishing poverty from the Irish farming districts. These creameries are favorite targets for the squads that burn buildings in reprisals on Sinn Fein

AN IRISH FARM OF THE PRESENT

"They kept the pig in the parlor," is a bygone legend; today's farm is as prosperous as it is picturesque

ners. There was an appearance of a besieged city in many quarters. Not even the machine-guns and rifles of the troops, however, were sufficient to quell the rioters, who surged through the streets of the city for four long days and nights. Many were killed, hundreds wounded, millions of dollars' worth of property destroyed. What maddens many of the people is the engagement against them of the Black and Tans, the "pound-a-day men"—hard characters of all kinds serving as hireling soldiers, and pursuing a policy of frightfulness on them.

How long are these things to continue; what prospect is there of peace and order? The British Government says it is desirous of terminating the Irish question in a manner satisfactory to all concerned. On the other hand the Sinn Feiners claim they are eager for a just settlement. With that avowed desire on both sides, a solution of the problem ought, surely, to be possible.

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ALL'S PEACEFUL HERE

Between the lines there must be a common ground, where settlement can be made, once and for all time, of a quarrel that has lasted for seven hundred years, at a terrific sacrifice, both to England and to Erin. Of one thing I am sure—Americans, always sympathetic, will rejoice when the "Irish problem" is no more.

OLD VILLAGE STREET, IRELAND

A LAND OF SCENERY AND STORY

BY DWIGHT L. ELMENDORF

IRELAND is a land of poetry, legend and song. Through all its myths and folk tales there run mingled strains of pathos and humor, that tell the story of Irish nature, with its laughter and its tears. Irish national character has been molded by years of bitter struggle, and has been mellowed by the poetic influence of scenes of endearing and romantic beauty. We have only to visit Ireland to appreciate this. Riding from south to north, and from east to west, we find ourselves ever under the spell of natural beauty and poetic associations.

BLARNEY CASTLE

A ride of a few miles from the southern city of Cork takes us to B'arney, where we find the shrine of Irish wit—Blarney Castle. It was Cormack MacCarthy who gave Blarney its fame. He lived about 1446 and was an Irish Bishop, a good churchman, and also a good fighter. But, more than that, he was the first to kiss the Blarney Stone. Cormack MacCarthy built Castle Blarney, and, one day—a short time after he had finished it—he was out walking, and happened to see an old woman drowning in a stream. He plunged in and bravely rescued her. The old woman blessed him and promised that she would, as a reward, bestow on him a tongue of such eloquence that no one, man, woman, friend or enemy, could resist him. The way to obtain this gift, she said, was to climb to the top of his castle, and kiss a certain stone in the wall situated about five feet from the top. MacCarthy followed directions and immediately found himself in possession of ready wit and winning eloquence. Through all the years since then, the Blarney Stone has held its magic charm, so that, even today, it is said that all those that climb to the top of the Castle and kiss this stone will receive the gift of golden speech.

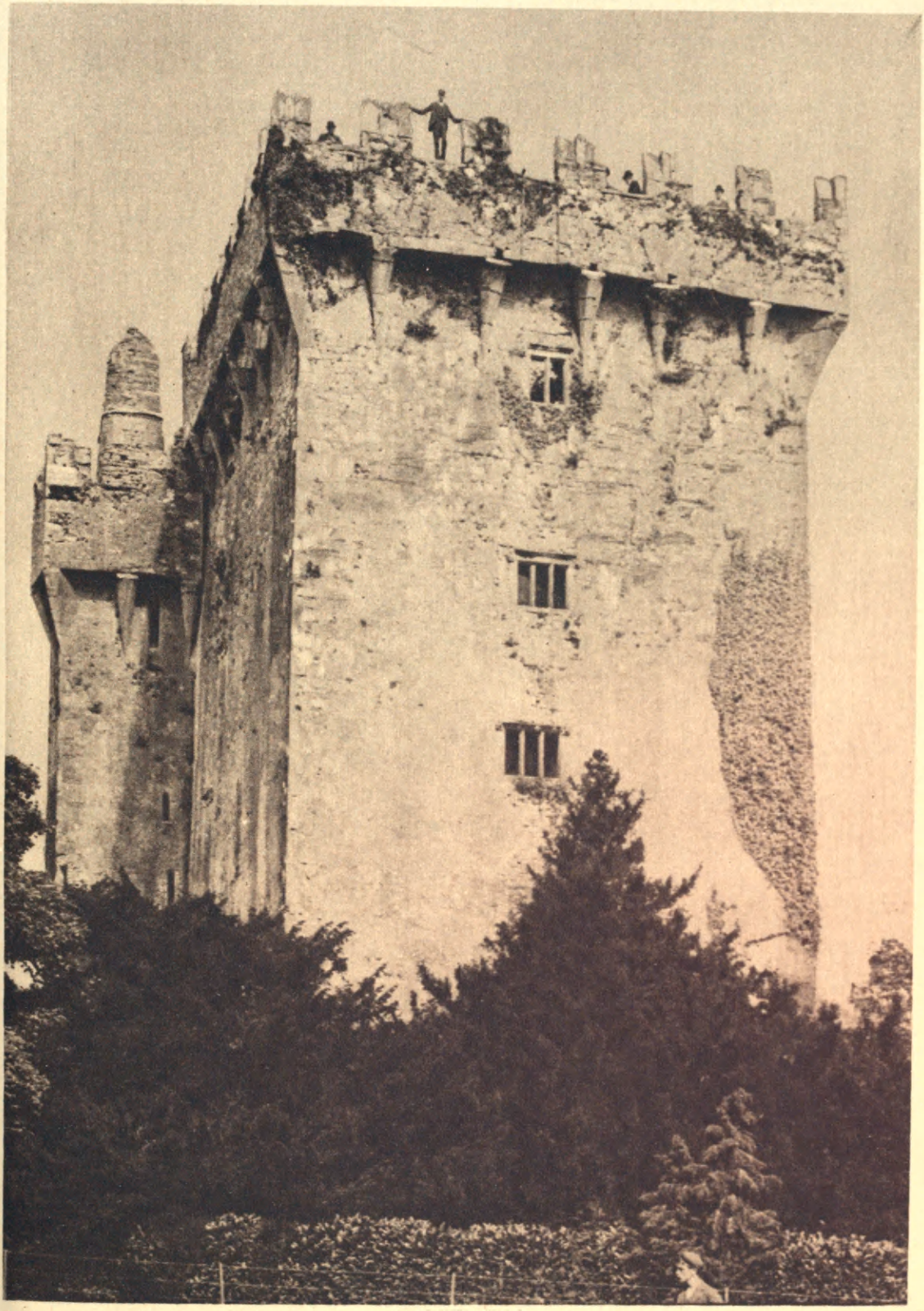
OLD IRISH CASTLE—ON THE RIVER SHANNON
Now a modern home

Blarney is rich in superstition. There is a legend that clings about the ruins that, out in the pastures near the castle, ghostly cattle fight at night with their living fellow cattle on the grounds—and it is reported, too, that, in the summer, fairies dance on the grass all night. As proof of this, fairy-rings are found in the lawn, shining white in the early morning dew.

LIMERICK

Limerick town, on the River Shannon, is known to us not only by the comical, lilting rhymes named after it, but for its varied and exciting history. Brian Boru, the warlike patriot king of old, expelled the invaders of Ireland from Limerick in 977, and the town became one of the seats of Irish kings. After 1690 Limerick came to be called the "city of the violated treaty." Our picture shows the stone on which the treaty was signed. It happened this way. William III, King of England, besieged Limerick but could not capture it. After much fighting, both sides agreed to end the siege by a treaty. The agreement was signed on Thomond Bridge, which crosses the Shannon. It granted liberty and privileges to the Irish Catholics—but the terms were almost contemptuously ignored, and the treaty quickly violated.

The town of Limerick actually embraces the lovely River Shannon, for it occupies both its banks and an island in the stream; and it is situated not far from the Golden Vale of Tipperary. The River Shannon, famed in story and song, flows through



BLARNEY CASTLE

some of the most beautiful and fertile tracts of Ireland—where, on all sides, there is something in nature to attract and interest the eye.

KILLARNEY

The whole lake region of Killarney fairly breathes romance—so much so that the visitor there instinctively falls into a mood of romantic dreaming. The lakes are about a mile and a half from the little town of Killarney. The Upper Lake covers 430 acres. The Middle Lake half again as large. In between there is the picturesque stream called the Long Range that joins the two lakes together. The Lower Lake is five miles long and three broad, the largest of the three. It is about this lake that many of the beautiful ruins are situated. Fair islands and lofty hills, old vine-clad castles and monasteries, and a thick riotous growth of holly and arbutus, in forests of beech, oak, fir and elm—all these make the region of Killarney the most entrancing spot in the British Isles. One of the finest views of the Lower Lake may be had from the beautiful estate of the Earl of Kenmare. On an island in this lake are the ruins of old Ross Castle, built centuries ago by one of the famous O'Donoghue's. This historic ivy-covered pile was the last stronghold in Munster to surrender to Cromwell's forces in 1652.

TARA AND ST. PATRICK

St. Patrick is the patron saint of Ireland, and a great statue of him stands on the Hill of Tara, near the village of that name, in County Meath. St. Patrick first converted the Irish to Christianity. He established churches all over Ireland—and died in 461. For centuries the Hill of Tara was the home of Irish Kings. There, vast assemblages of the people were held, and there stands the Lia Fial or "Stone of Destiny," on which the kings of Ireland were crowned.

THE LEGEND OF CASHEL

In the midst of a great crowd of people St. Patrick was baptizing Oengus, the son of King Natfraitch—the good saint's first conversion from heathenism in all south Ireland. While being baptized, the spike of St. Patrick's crozier, accidentally, fell on Oengus' foot and passed through it. During the long ceremony the young prince suffered but never winced. Only when the rite was completed did St. Patrick discover that his royal convert was in great pain.

"Why didst thou not tell me?" he asked Oengus.

"Ah, Father," he replied, "I thought it was a part of the holy rite!"

"Then," said the good saint, "thou shalt have thy reward. Not one of thy successors to the throne of Cashel shall die of a wound from today forever!"

And it is said that this promise was fulfilled so truly that twenty-seven kings ruled over Cashel before ever one was slain.

THE GIANTS' CAUSEWAY

Fin MacCool was a brawny giant—the unconquered champion of Ireland. So

THE RIVER SHANNON AT FERMOY

ROSS CASTLE, KILLARNEY

GIANT'S CAUSEWAY, SHOWING WISHING SEAT

much afraid of him were all the other giants of the land that MacCool had to turn elsewhere to find a fitting foeman. Bennandonner, the champion giant of Scotland, looked like a likely candidate to MacCool, and when Bennandonner showed equal willingness to "mix it up" with the Irishman, "the match was on," as we would say. Bennandonner said that he would cross over from Scotland to meet the Irishman if it were not winter and the water too cold for swimming. But Fin MacCool would have no such excuse, and called his opponent's bluff by building a great causeway from Scotland to Ireland. Then Bennandonner had to come over, and Fin gave him a good thrashing—so the Scotchman had all his trouble of crossing and the pain of defeat beside. Fin, like a good generous Irishman, made friends with the man he had "bested" and let him marry and settle in Ireland—which shows that the Irish love of hospitality is equal to their love of a good "scrap."

After the death of the giants the causeway was not used much, and gradually sank under the sea, so that only parts of it are now visible—some of it on the north coast of Ireland and some over on the other end, in Scotland.

Such was the origin of the Giants' Causeway—or at least that is what they tell you when you go there to see it. The geologists tell us another story. They say that the stones are volcanic in origin,—basalt—and that the strange cleavage has been caused by the cracking of the rock during a process of cooling, long ago in early geological time. It is one of nature's wonder-works. It lies on the north coast of County Antrim and is divided into Little Causeway, which is called the "Honeycomb," and the Grand Causeway. Its pillars are about 40,000 in number, five or six sided, 15 to 20 inches in diameter, and in height some are 20 feet and more.

All visitors to the Causeway seek to get their fondest wish in life realized by seating themselves in the Wishing Chair—an odd formation in the Causeway—and wishing hard for a few seconds.

When we have gained the Golden Tongue by kissing the Blarney Stone, and then sat in the Wishing Chair of the Giants' Causeway, we can leave Ireland with a comforting sense of assurance that we can win our way everywhere and get anything we want.

TYPICAL ROCK SCENERY ON THE NORTH COAST OF IRELAND
THE CARRICLE-NA-REDE ROPE BRIDGE SPANS A CHASM EIGHTY FEET DEEP

SUNSET AND EVENING CALM

OLD WEIR BRIDGE, CROSSING THE LONG RANGE STREAM, KILLARNEY

THE LOWER LAKE, KILLARNE
THE UPPE

"BY KILLARNEY'S

A RETREAT ON THE LOWER LAKE

ROSS ISLAND AND ROSS CASTLE, ON THE LOWER LAKE, KILLARNEY

RM LORD KENMARE'S MANSION
K, KILLARNEY

LAKES AND RILLS"

WHAT IRELAND IS—AND WANTS

BY JAMES J. WALSH, M.D., PH.D.

HISTORIANS are agreed that Ireland is the oldest pure nationality in Europe. When we recall how much the mingling of the Goths and Teutons generally and the Huns in certain places and the Danes and other North men meant for other countries and comparatively how little for Ireland, it is easy to understand the reason for the expression. Most of the men and women who now live in Ireland are descendants of people who have been on the island for from two thousand to three thousand years. They repelled the Danes, they absorbed the Normans who came over for conquest, until they became more Irish than the Irish themselves, and they have kept the strain of their nationality free from serious intermingling down to our own time.

DR. J. J. WALSH

Ireland has been not only a nation but a cultivated nation far longer than any other people now in Europe. When St. Patrick came to Ireland there was already in existence there a great literature. Meve, Conor MacNessa, Cuchulainn and Finn MacCumhail (MacCool) are real historical personalities and their date is well determined. The first of these lived just before Christ, the others in the centuries immediately after, and their heroic deeds were written down probably not long after the beginning of the Christian era. It was the stories of these heroes that made up the literature of pagan Ireland. Good critics have not hesitated to declare some of these epic stories worthy of a place beside the great epics of the older nations, even the Greeks and the Hindus. It is a striking evidence of the tolerant spirit of the converted Irish Christians that, instead of obliterating this old pagan literature, they faithfully preserved it, making only slight, easily recognizable modifications in it, so as to give it a certain Christian tinge.

After conversion to Christianity Ireland occupied a unique position. Separated from the mainland by so much greater distance than England, Ireland never came under the Roman domination and did not share in the decadence that occurred in the Roman Empire. Besides Ireland was not invaded by the barbarians from the North until well on in the Middle Ages. When this nation, with its magnificent pagan literature became Christian, Ireland came to be the Island of Saints and of Scholars. When the migration of nations left Europe almost absolutely without culture, or any chance for cultivation, Ireland became the Mecca for all those who wanted to develop their minds. St. Patrick founded a great school at Armagh, and all his prominent disciples did likewise. To these schools literally thousands of foreign students flocked. They came from Britain and Gall and Iberia, from Switzerland and Italy and even from Egypt and the near East.

After a century of intensive cultivation of the spirit the Irish monks went as missionaries not only of religion but of education to the continent, and founded schools in many places. There was an Irish foundation at Tours in France, another at St. Gall in Switzerland and a third even as far as Bobbio in Italy. Mrs. Alice Stopford Green (whose husband, John Richard Green, wrote the well-known History of the English People) once declared that any man who could read or speak Greek anywhere in Europe west of Italy from the fifth to the ninth centuries had either been taught the language by an Irishman or by someone who owed his education to an Irishman.

This idyllic period of education in Ireland was rudely disturbed by the coming of the Danes. They had a very genius for devastation. The great schools and their churches enriched by generations of artists working in precious metals, provided a wealth of spoil for the invaders. They established permanent settlements at Waterford and Limerick and a powerful kingdom in Dublin. For a century and a half the Irish battled with them. In 1014 Brian Boru defeated them definitely at Clontarf,

MUCKROSS ABBEY—BETWEEN TWO OF THE LAKES OF KILLARNEY

but, alas! Brian himself, and his son and grandson, fell in the battle. The bonds of authority had been loosened during the long struggle with the Danes, and "the next century and a half was a weary waste of turbulence and war."

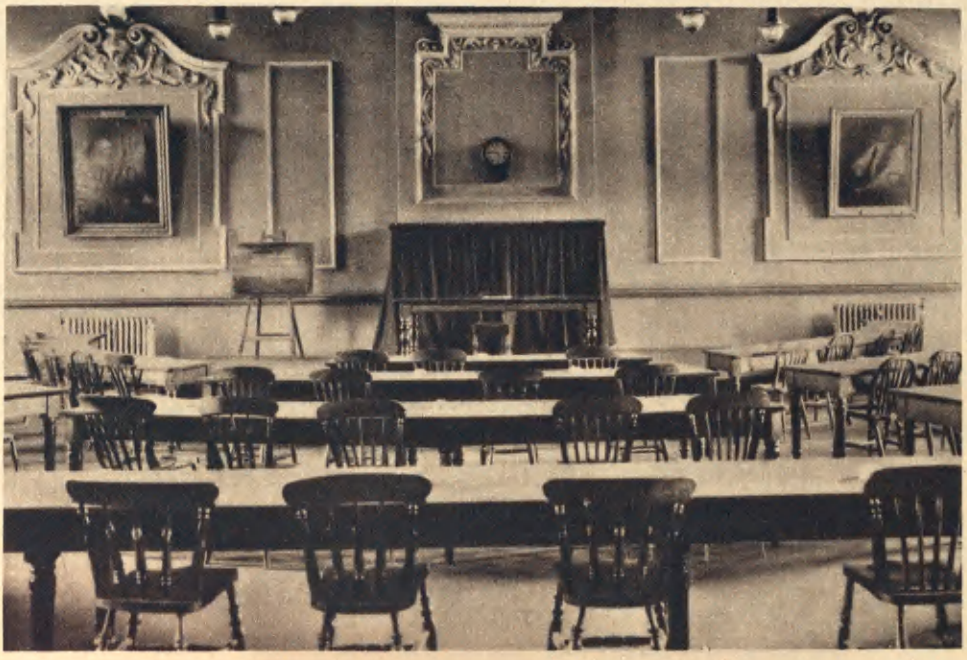
The Normans took advantage of an invitation to come to the aid of an Irish chief, to land in Ireland and in 1171 Henry II came to Dublin and received the submission of many Irish chiefs, tired of the long civil wars. Finding their language neglected, their literature contemned, their nation despised, a century and a half later the Irish invited Edward Bruce, the younger brother of Robert, and he was crowned king. He was defeated and slain at Faughart, 1318. During the Wars of the Roses and the long war with France, the English lost their hold so that, at the beginning of the sixteenth century, English power in Ireland had almost disappeared. Henry VIII, by a policy of frightfulness, succeeded in re-establishing his authority, and was made king—before that the English King having been but Lord of Ireland. Under Elizabeth, the Irish were once more in rebellion, and Hugh O'Neill, Earl of Tyrone, gained at the Yellow Ford (1598) the greatest victory ever won in Ireland over English arms. He continued the war for ten years, and laid down his arms only on proper terms being guaranteed.

The Irish expected much from Elizabeth's successor, James I, son of Mary Queen of Scots, but were sadly disappointed. He "planted" the confiscated lands of Ulster with English Protestants and Scotch Presbyterians—the origin of the modern Ulster. Under his son, Charles I, the policy of "persecution and plantation" was continued. The despoiled Irish looked helplessly on, hating the colonists for whom they had been beggared. The result was the rebellion, sometimes called the massacre, of 1641. Ireland asserted herself, a General Assembly was organized, Owen Roe O'Neill, nephew of the great Earl of Tyrone, was the leading military spirit. The civil war in England left the English in Ireland unsupported and O'Neill won the great victory of Benburb, 1646. Once more English rule was practically over-thrown. Oliver Cromwell brought English troops to Ireland and the money for putting down the rebellion was subscribed by Englishmen who "adventured" it on the promise of Irish land. The "Cromwellian Settlement" was made to provide this land. It has *unsettled* everything ever since. The Irish supported James II, hoping that he would do them justice, but he was defeated at the Battle of The Boyne. What Burke once declared to be the worst penal laws ever enacted were put into effect to eradicate the Catholic Irish. It seems impossible now to believe that such laws could have been enforced, but they were. Toward the end of the eighteenth century there was some mitigation of the penal laws under the influence of the Revolution in America and the French Revolution. There was an English reaction against this leniency that precipitated Robert Emmet's Revolution of 1798. Thus Ireland's desperate outreachings for freedom continued.

The nineteenth century saw a series of organized attempts to secure civil rights. O'Connell's movement compelled the passage of a Catholic Relief Bill in 1829. In the forties came the potato blight and famine, and literally millions of people perished. Many thousands sailed for America, most of them to die of "famine fever" on the way. In a few years the population of Ireland was reduced by one-half. The Irish cause seemed hopeless, but the Fenian movement revealed the deep disaffection that existed, and a reaction took place in liberal English minds. Gladstone took up the Irish cause. The Irish church was disestablished, and then the various Land Acts were passed, securing the farmers from the awful "rack rents." Only by perpetual struggle the Irish succeeded in forcing the correction of age-long injustices. Parnell made them a factor in the English Parliament. His death set back Home Rule, but when the Home

EVEN OLD WALLS PROCLAIM THE SLOGAN OF THE DAY

THE ROCK OF CASHEL, COUNTY TIPPERARY. HISTORIC HILL, 300 FEET HIGH, SHOWING CASTLE, ABBEY AND CROSS

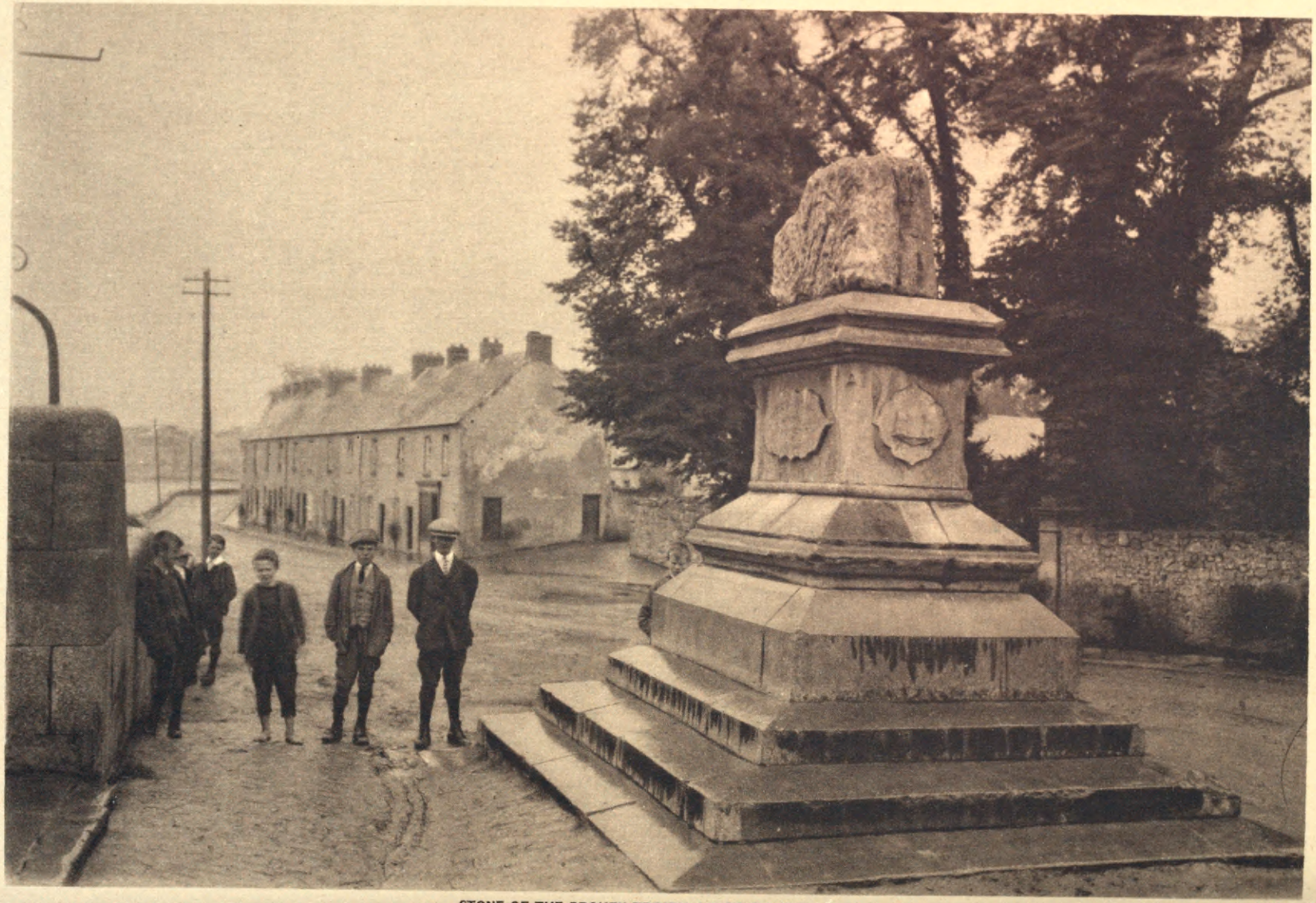


CONVENTION HALL, TRINITY COLLEGE, DUBLIN
The room in which De Valera was declared President of the Republic

Rule bill was passed, Ulsterites threatened to rise in rebellion, though a majority of the representatives in the English Parliament from Ulster itself were Home Rulers.

At the beginning of the twentieth century, Sinn Fein (pronounced shin fane) that is, "We Ourselves," was organized for Irish interests. What Sinn Fein wants is "Self Determination." It is founded on the faith of the Irish people that they have strength to free themselves. This is not politics—it is a national philosophy. When the Home Rule bill was shelved, they elected a majority of members of Parliament who refused to sit in Westminster. They then elected a Constituent Assembly which chose a president, and he selected his cabinet. The Government of Ireland was practically taken over by them. The English courts lost power, the Irish courts functioned in their place. To a great extent Ireland became independent. It is in the effort to bring English rule back to Ireland that "the Black and Tans," composed of the worst characters of the English army and many ex-prisoners, have been thrown into Ireland, and a policy of frightfulness instituted — with "reprisals" at the hands of such men.

Sinn Fein asks self determination for the oldest nation in Europe, which has kept its nationality for ten centuries in face of the almost impossible. The English writer, Jerome K. Jerome, said, "Why should the independence of Ireland frighten us? Why is England the only country that dare not live side by side with a free people? If the French were a little people, I suppose we should be arguing the same way, declaring that we must conquer France and hold her down because she happens to be only twenty miles from Dover." He added: "If America argued as we do, she would conquer and annex Canada, as she easily could do. . . . Let Ireland go with God's blessing and a shake of the hand and the hate and evil of a thousand years will be drowned and out of the sea will arise a friendly nation that we can live with side by side." That is the opinion of most of the liberal minds of England, many more than we have any idea of in America and, above all, that is the feeling of the majority of the subjects of the British Empire in the Dominions. The Irish question is now the crux of the duration of the Empire and its prestige in the world.



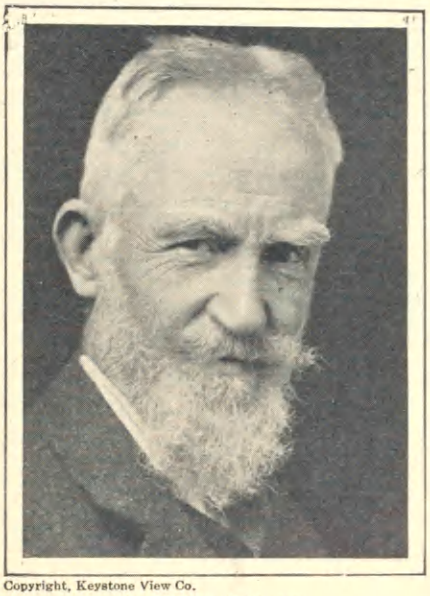
STONE OF THE BROKEN TREATY, LIMERICK, IRELAND

HILL OF TARA AND STATUE OF ST. PATRICK

WHAT NEXT—AS SHAW SEES IT

SETTLEMENT of Ireland's national problems will come along industrial and not political lines, George Bernard Shaw, famous Irish playwright and publicist believes.

Shaw has written much on Irish affairs. One of his plays, "John Bull's Other Island," interprets Anglo-Irish relations, as he sees them. In a long preface he analyzes the causes of these relations in a manner entirely Shavian, sparing neither side and partisan, apparently, to none.



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G. BERNARD SHAW

Explaining his prediction, recently in the New York *American*, Shaw writes: "We shall yet see Sir Edward Carson (leader of the Ulster forces) calling upon every Protestant in Ireland, and indeed on every landlord, Protestant or Catholic, Royalist or Republican, Covenanter or Sinn Feiner, to rally for a struggle against partition."

(Sir Edward Carson, until a short time ago, was irrevocably opposed to Home Rule for Ireland because, he said, the Protestant north of Ireland would be controlled politically, under such an arrangement, by the more populous Catholic south of Ireland.)

"In Ireland, as elsewhere, the social strains set up by the opposition of pecuniary interests between property and proletarian labor finally determine the political division. However, the strains set up by the Nationalist and Unionist sentiment may cut across them. When Ulster has segregated itself from the south, Ulster capital will discover that it has segregated itself from its natural proprietory allies, the southern farmers, and compelled itself to fight organized labor, at the greatest possible disadvantage, in the field where the industrial proletariat is concentrated in overwhelming electoral force."

"Sir Edward Carson has admitted in Parliament that labor can win every seat in Ulster if it likes. Why, then, have the Ulster employers accepted this bill? Partly because, as I warned them, their old intention of simply ignoring any Home Rule Act collapsed the moment they realized that the only effect would be that Labor would jump the claim and have a walkover at the Ulster polls, but chiefly (my argument being too unfamiliar for them to take in) because they had a blind dread that an all-Ireland Parliament would tax Ulster commerce to death.

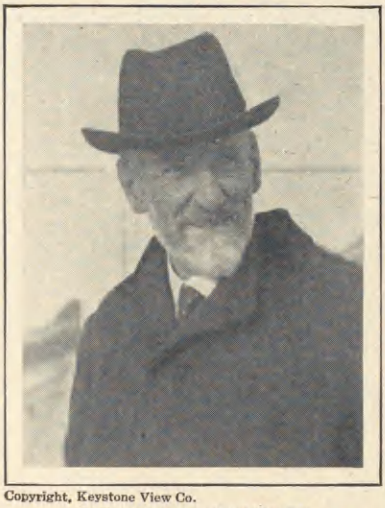
"To escape that, they have placed themselves politically at the mercy of their own employees, who have every conceivable motive for not only raising wages and shortening hours of labor by trade union action, but also of imposing further factory legislation, and providing unemployment insurance, education, housing, school meals, slum abolitions, electric light, trams, parks, bands and a dozen other municipal services yet undreamed of, with the cost . . . thrown on excess profits, unearned incomes and all the other sources at which property is vulnerable to Socialist schemes of . . . taxation."

The religious issue, still regarded by the majority of persons as the chief cause of Irish unrest, does not impress Shaw as a serious factor in Irish affairs. He says that raising the bugaboo of a Catholic south of Ireland controlling a Protestant north of Ireland will no longer split the Irish people into two groups unable to reach an agreement on how they are to be governed. Ulster workers, intent upon improving their conditions at the expense of Ulster capital, will not be swerved by raising this traditional issue, he declares.

When Ulster employers realize this, Shaw predicts, Sir Edward Carson will again reverse his position. "Everywhere in Europe now," he says, "industrial employers are holding Socialism off by getting their backs against the immense and almost immovable

conservative mass of peasant proprietors.

"In Ireland, that mass is composed mainly of Sinn Fein farmers, who, though perfectly ready to kick the King's Crown into the Shannon, may be depended upon not to budge an inch when they are threatened by their laborers with high taxes, high wages, and field legislation."



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SIR HORACE PLUNKETT

He taught Irish farmers co-operation, which has enabled them to prosper

If Ireland is partitioned politically, Shaw further predicts, we shall see a southern Ireland, controlled by farmers making profits through co-operative enterprises, taught by Sir Horace Plunkett, an Ulster controlled by radical labor and Sir Edward Carson calling upon employers and landlords, northern and southern alike, to forget the religious issue, unite for an Irish Parliament.

"I do not suppose that readers will believe this until it actually happens, any more than they believed my previous forecast until it was fulfilled, by which time they had forgotten that I made it; still, I think it worth recording, as there may be an intelligent person here and there capable of being convinced by it. We are sufficiently embittered and perplexed by old antagonisms without believing them irreconcilable, when in fact they are bound to dissolve presently under the pressure of circumstances."

A complete change in Ireland's military possibilities has taken place since the war, Shaw says, which lays the ghost of a free Ireland being a military menace to the British Empire.

"The war proved," he writes, "that the most formidable armaments are not those costly battleships and big battalions which rich and populous countries only can afford, but cheap submarines and aeroplanes, cheaper bombs and floating mines, still cheaper poison gases, and, cheapest of all, infected and consequentially infectious microbes.

"These things unquestionably do make small communities far more dangerous to large ones than they were ten years ago. But they are not a reason for subjugating small communities, because it is part of danger that they elude mere subjugation, and can be removed only by extermination. They also make large communities quite horribly dangerous—for example, France is enormously more dangerous to England than Ireland is, and a war of extermination waged between France and England in pursuit of an illusion of security would exterminate civilization.

"There is but one remedy, only one, and that remedy is conscience. Recommend it to the consideration of the next person in Ireland, to whatever side he may belong, who feels tempted to commit murder."

THE NEW FARMER AND HIS HOME

Sinn Fein's strength lies in a membership of men of this type

Unlike other Irish publicists, Shaw takes no part in the Irish conflict. He belongs to no party and has never held office. His views are those of a disinterested observer rather than those of a participant in the struggle for or against the freedom of Ireland.

THE IRISH IN AMERICAN HISTORY

"IRELAND," says an Irishman, "has contributed more to the making of America than any other nation but England, the motherland." A grandson of Martha Washington, George Washington Custis, extolled "the sons of Ireland, who, with aspiration deep and fervent for our cause, cried from their hearts, 'God save America!' Up to the coming of the French," he declared, "Ireland had furnished soldiers in the ratio of one hundred for one of any nation whatever . . . . Let Truth and Justice, guiding the pen of history, inscribe on the tablets of America's remembrance the immortal phrase of Edmund Burke, 'Eternal Gratitude to Irishmen.'"

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STATUE OF COMMODORE JOHN BARRY

Erected in 1907, by the Society of the Friendly Sons of St. Patrick, in Independence Square, Philadelphia

In the early years of New England settlement, Ireland's contribution to the population of the Colonies was larger than that of any other country.

When Benjamin Franklin was abroad in 1771, he visited Ireland to get the drift of sentiment toward America. After he returned home he addressed a formal letter to the Irish people setting forth the patriot cause, and making a plea for assistance. Ireland's answer is written large on our national scroll of service.

The son of a Limerick schoolmaster—John Sullivan—made the first strategic move in the War for American Independence. In a British fort he seized the stores of powder that a few months later fed the guns at the battle of Bunker Hill.

A third of the officers in Washington's army were of Irish birth or descent, and a large proportion of the troops were of the same parentage. Captain John Barry, born in County Wexford, won the first sea battle for America and is known to posterity as the "Father of the American Navy." Washington, in recognition of his debt to the Irish, made "St. Patrick" the watchword on the eve of the British evacuation of Boston, March 17, 1776. The Friendly Sons of St. Patrick raised half a million dollars for the succor of the exhausted troops at Valley Forge, and, after the war, elected Washington a member of the organization.

Twelve signers of the Declaration of Independence were Irishmen, or sons of Irishmen. One of these was John Hancock. Another was Robert Treat Paine.

In the English parliament, two Irishmen, Edmund Burke and Richard Brinsley Sheridan, gave the benefit of their oratory to the defence of the Colonies.

Nearly half the Presidents of the United States have had Irish ancestry. In the war of 1812 Irish-Americans won victories that decisively helped America to win the war.

One hundred and fifty thousand native-born Irishmen fought in the Civil War. In the last two wars that have engaged American troops, valiant fighters of Irish blood have carried on the traditions of their race.

IRISH SONGS McCORMACK SINGS

"LILTING Irish songs, with the twang of the ould sod, and love and romance, and a bit of mischief too," have made John McCormack, Irish tenor, internationally famous. In making programs, the most beloved of Irish tenors never fails to include folksongs of his native land, which he "holds to be the most beautiful music of this kind."

Born in Athlone, "straight up the River Shannon," whose charms he extols in verse and song, McCormack recalls that the first tune to meet his youthful ears was "The Wearin' of the Green," "picked out with one finger" by his music-loving father. "The songs I knew then were good songs," says he in his own story, published in 1918. "'Believe Me if All Those Endearing Young Charms' was one. My mother taught it to me, and, though I sing it to this day, I have never found it necessary to change so much as a breath mark in it."

When the boyish young tenor made his bow to London a score of years ago, he sang "The Irish Emigrant," or "The Woods of Caillino." Samuel Lover, one of the most treasured of early Irish writers, relates that this ballad was brought from Ireland by the soldiers of Queen Elizabeth. It became so popular in Shakespeare's time that he quoted it in "Henry V."

Lover's "Rory O'More" was written to offset the tendency to vulgarity and roisterousness that marked the Irish ballad of his day. "The Low Back'd Car," another of Lover's songs, is a prime favorite with McCormack's concert and phonograph audiences.

Indisputably, "Kathleen Mavourneen" reigns the queen of Irish songs. An Irishwoman wrote the words; the air was conceived by an Englishman of Irish descent, Frederick Crouch. The melody came to him one day while he was traveling through a lovely bit of river scenery. Adelina Patti used the song regularly on her programs, It earned close to a hundred thousand dollars for its publishers, who paid the composer fifty dollars for the rights. Crouch came to the United States in middle life, and died in poor circumstances at the age of eighty-nine.

When McCormack, whose voice literally has girdled the globe with its golden strains, mourns for "Kathleen," or bids his audience "Come Back to Erin," or drift with him through the Lakes of Killarney, hearts respond, and follow where he leads. For all the world loves the songs of John McCormack.

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THEY ALL LOVE IRISH SONGS

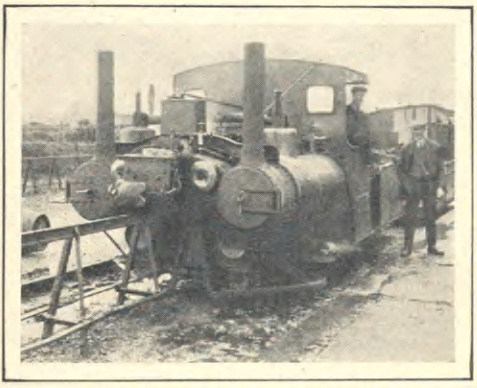
Six thousand in this audience to hear John McCormack in the Hippodrome, New York

THE WORLD'S FUNNIEST RAILROAD

THE Irish people, noted for their humor, have exhibited this characteristic in building the queerest railway in existence.

It is known as the Lartigue Railway, and links Ballybunnion and Listowel on the west coast of Ireland.

It is a mono-rail road twelve miles in length—the most curious "contraption" in the way of transportation in existence. It has a single track elevated above the ground a distance of about three feet. The engines as well as the cars are all twins, balanced on the mono-rail.



BALANCED ON A SINGLE RAIL

In its balance of traffic, therefore, it is always a case of "fifty-fifty," or an "even break," in the weight of passengers and freight. If there happen to be five passengers in a car on one side of the rail and but four in the car on the other side, a bag filled with sand has to be placed on the lighter side to keep the train from tipping over.

This peculiarity calls for a train crew possessed of tact, for passengers must be placed by weight, not preference, an arrangement that they do not always take kindly to. Particularly in the case of women does the guard have to exercise a fine descrimination; not only do they object to being separated, but frequently resent his estimate of their weight.

This funny little railroad has its own way of reckoning with the problem of street crossings. There the rail has to be cut to permit vehicles to pass. Here and there drawbridges have been built over the track, which can be raised or lowered at will, but these are considered cumbersome and not very practical. The solution is usually a "track-gate." The most amusing experience on the road with such a gate comes when the train passes a farm-house. The farmer, who would be unable to enter his yard because of the elevated rail, cuts and makes a swinging-gate of the track. When, therefore, the train approaches the farm-house, the engineer may find the swinging track-gate wide open—in which case, he blows his whistle, and after several toots, the farmer comes out, closes his gate, and the train, which has been waiting, is permitted to resume its speed of four miles per hour.

Speed is not an essential in the operating plan of the funniest railroad. With traffic subject to the kind of interruption just described and an engine capable of the magnificent speed of four miles an hour, one does not expect too much of it. The necessity of rushing from place to place has not penetrated this part of Ireland as yet. Indeed, the passenger is more than compensated for his loss of time by his enjoyment of the beautiful country through which he passes, an enjoyment that a speedier train would make impossible.

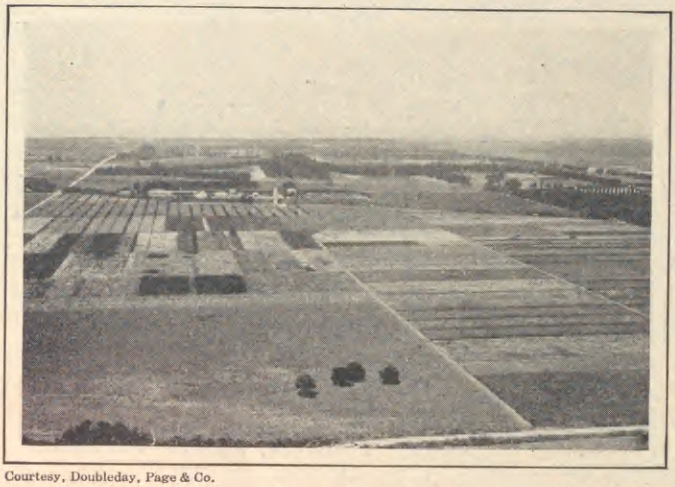
YOU SIT ACCORDING TO WEIGHT ON THIS TRAIN

Thousands of Irishmen travel over this unique railway, as Ballybunnion is one of the prettiest resorts in Erin and one of the most popular. Speed is not the essential that it is in America, this fact testifies.

MILLIONS AND MILES OF SEEDS

LETTING farms go to seed is a profitable business. Some sections of the United States are entirely given up to the industry. Millions of tons of pedigreed seeds are produced every year. Cargoes of them go abroad, but the fields of America consume most of the annual crop of flower seeds, vegetable seeds, cereal seeds, grass seeds,—seeds of every shape, size and future promise.

Almost every state in the Union grows seeds commercially, and in about half the states seed control laws are in force, to prevent misbranding and substitution. California has the largest area devoted to miscellaneous production. The Southern States specialize in onion and vine seeds. The Mid-West has an extensive acreage in seed corn and beans. The gardens of the Atlantic seaboard yield carloads of cabbage, pea, tomato and melon seed.



Courtesy, Doubleday, Page & Co.

A GARDEN FOR A GIANT

Acre after acre of blossoms on a California seed farm

In Toledo, Ohio, a market center, brokers deal in clover seed "futures," just as speculators gamble in next year's wheat crop in the Chicago pit. Seventy-five million bushels of seed are needed to sow the fifty million acres of wheat prairies in the United States.

Before the War, America imported half of her vegetable seeds and most of her flower seeds. But today the world's seed garden is in the New World.

Going down from Monterey, California, toward Santa Barbara, the traveler sees miles of farming land sown exclusively for a seed harvest. Here is a hundred-acre field in a single variety of radish, and, beyond, a vast bed of violets that will fade and dry unplucked, in the cause of propagation.

The planting and reaping of the California crop is a mammoth enterprise. A single firm sows more than three thousand acres a year. Care is taken not to plant adjoining fields with varieties of the same species; in this way a pure strain is assured. Next-door plant neighbors on seed farms are always strangers, and are never related to each other.

Enough nasturtium seed is grown in Washington, Oregon and California to plant a row across the continent. Growers have developed over a hundred varieties of the sweet pea, and through their enterprise made it "the world's most popular annual." Think, ye back-yard gardeners, of a field of sweet peas two hundred acres broad! When you buy a handful of packets for your spring planting, picture a mound of sacks containing two dozen million handfuls of prolific grains—each one capable of producing a wealth of vines and odorous blossoms!

More than two thousand acres of California land are devoted to the raising of sweet pea seed.

The story of seed breeding, and the devotion of men that have spent their lives developing one particular species, makes an absorbing tale.

A Long Island grower has gained such renown as a cultivator of cabbages that gardeners pay twice as much for his seeds as for any others of the same kind. New York State boasts a plant wizard who has perfected the seed of a stringless string bean.

"To give plants the best available grandfathers," to supply the world with seeds grown under dependable scientific conditions, is the slogan of the modern American wholesale grower of seed.

PUPPETS AND PUPPETEERING

PLAYING with dolls, and making dolls play, is the two-fold vocation of Tony Sarg. Tony Sarg is a Guatemalan artist. Of late years he has surrendered the brush for the modeling tool, created little creatures of wood and wire instead of images on canvas. Pulling strings on the puppet stage is his present occupation. Under his direction a company of mock actors is now touring the United States. In putting puppets to work on the American stage, he has made a brand new departure—given us a new amusement.

WOODEN ACTORS IN "RIP VAN WINKLE"

There are few corners of the world that have not been brightened by the antics of the animated doll. The booth of the puppeteer lures the passerby in Turkey and Siam, in Italy, France and England. The Punch and Judy show is Italy's special contribution. In the parks of Paris and other Continental cities the abusive pair daily draws crowds of onlookers, who sit through the performance, "pleased as Punch" with the realistic wrangling. Punch, most outrageous of comedians, is the puppet descendant of a famous Italian actor, who created the part some three hundred years ago, and played it in France before Louis XIV.

Long before the Italian *Pulcinello* was contrived to make nations laugh, mannikins were used in presenting sacred plays based on Bible tales. In the days of Queen Elizabeth, wandering puppets gave miracle plays in villages of England that never had an opportunity to see the imposing "morality" spectacles the cities knew. Shakespeare, in the "Winter's Tale," refers to "a motion of the Prodigal Son,"—"motion" being early English for a marionette exhibition. These players in primitive religious dramas got their name from little figures of the Virgin Mary—*mariolettes*—that were sold on the streets of Italy. The word "puppet" comes from *poupée*, the French for doll.

Italians have a traditional fondness for puppet plays whose theme is a romance of medieval days. For many years there has been a "Theater of Marionettes" in New York's Italian quarter. The low room is crowded every evening with a chattering throng, eager for the curtain to rise on the imitation drama. "Fiercely immobile as to expression, but most active as to arms and legs," knights and ladies stalk romantically about, and dance and make love according to the dictates of the shirt-sleeved puppet-master in the wings. Battle scenes of amazing fury rouse the audience to outbursts of joy. "Then it is that heroic deeds are done—tin swords resound upon tin armor, helmets are battered about and knocked off, dust rises from the field, the valiant dead falling in staring heaps."

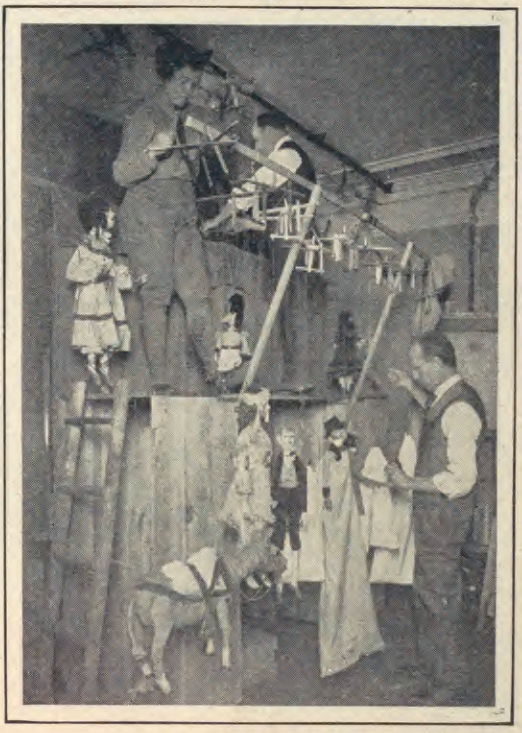
In London, "Holmen's Marionettes" are a regular feature of the dramatic season. The Holmen family have been professional puppet showmen for generations. With incredible dexterity the small figures carry through scenes of lively emotion. Sometimes a clown or a tight-rope walker varies the program with his nimble tricks, to the wonder of spectators, young and old. There is a renowned theater in Munich, and another in Rome, given over to marionette actors. Quite recently a repertory of puppet plays was successfully presented in Chicago by a group of authors and artists.

It is a far cry from the puppetry of religious "motions" to the sophisticated dramas of today. A distinction is properly made between puppets of the Punch and Judy sort, manipulated by a hand inserted through an empty body, and the bands of marionettes that, possessed of all their members, and wondrously bewigged and costumed, entertain present-day audiences.

Modern marionettes have nearly as many joints as a human being. Their

faces are modeled of wax, and, in the case of the Sarg castes, are contrived with supreme skill. Since even the cleverest puppeteer has not yet found a way to manipulate the muscles of a puppet's wax cheek, each countenance conveys, of course, but one emotion.

In "Rip van Winkle," Tony Sarg's 1920-21 production, the figures are so ingeniously articulated that remarkably life-like movements and expressions are achieved. Above the tiny stage, unseen on either side, are narrow lofts where the puppeteers stand or kneel. In their hands they hold small frames, consisting of short upright sticks and cross pieces. From each bar hangs a thread that governs a single puppet motion. The characters under Mr. Sarg's direction pretend to such variety of puppetish pantomime that most of them have more than twenty strings to their joints. Days and weeks of toil go into the making and rehearsing of the inanimate caste of a long play like "Rip."



BEHIND THE SCENES

In the center above is Tony Sarg, chief puppeteer

Behind the scenes at a puppet show, moving among the miniature "props" and crouching in the lofts, are the young men and women that control the destinies and actions of the mechanical actors. They are the voices too. For, as they pull the strings, the puppeteers speak the lines of the part. Sometimes the skeins of the puppets' fate tangle, and the curtain has to be lowered to permit a hurried adjustment. The writer witnessed the humiliation of "Nick Vedder," who literally got so twisted that he had to be removed permanently from the scene. The puppets are made about three feet tall for theater presentation. When the day's work is over they are encased in blue gingham bags and hung in a row to await the next performance.

The writing of a puppet drama is a special art. "Spoken lines must be long enough to allow the marionettes to 'suit the action to the word.'"

Now that America has a proficient puppet company, we may look for annual appearances of these fascinating little mimes of wood, wire and wax.

—Ruth Kedzie Wood

THE CAST RESPONDS TO A CURTAIN CALL

Why the Crowd Around Johnstone?

IT was in a club. Eight or ten men were congregated in one corner, and one man was holding the attention of them all.

I have read in many places that it is personality and "presence" that attract people. But I confess to you that when I drew closer and saw Johnstone, and listened for only a few minutes, I knew exactly what made us all listen—*Johnstone knew the facts!*

At first the subject was that ever-present one, *Labor*. Like everyone else, I had heard so much for and against capital and labor, I was quite tired of it, and thought I would turn away. But that man Johnstone held me. No doting on a hobby theory for a solution of the trouble, but setting forth the difficulties, and broad possible solutions. It was clear, decisive—*he had his bearings.*

AFTER a little while, I fell into the conversation which drifted to various things of common interest, as such discussions will.

But whether *current events, politics, education, science, international affairs, business, war, peace, the Army, the Navy*—it didn't make any difference—we all volunteered our opinions. But most of the others felt like I did—I would express an opinion and involuntarily look toward Johnstone to see if he would second it. And if he didn't everybody awaited his opinion. And when he expressed his opinion mine was left empty. Opinions of others met a similar fate.

There was no getting away from it—*Johnstone knew the facts.*

SHORTLY after this I asked a man of my acquaintance, for whose standing I had great admiration, "How did Johnstone manage to acquire such a bearing of confidence amid the jumble of current events?" His answer was laconic:

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? WHO; WHAT; WHEN; AND WHY ?

****On this page we print such questions and answers selected from our daily mail as seem to have a general interest.*

Question. What are the Seven Wonders of the World?

Answer. There are three groups of "Seven Wonders"—the "Seven Wonders of the *Ancient World*" were the Pyramids of Egypt; the Light-house of Ptolemy on the Island of Pharos, at Alexandria, Egypt; Hanging Gardens of Babylon; Temple of Diana at Ephesus; Statue of Jupiter by Phidias; Mausoleum of Artemisia; Colossus of Rhodes. The "Seven Wonders of the *Middle Ages*" were the Coliseum of Rome; Catacombs of Alexandria; Great Wall of China; Stonehenge (prehistoric stone monument at Salisbury Plains, England); Leaning Tower of Pisa; Porcelain Tower of Nankin; Mosque of St. Sophia in Constantinople. The "Seven *New Wonders* of the World" are Wireless; Telephone; Aeroplane; Radium; Antiseptics and Antitoxins; Spectrum Analysis; X-Rays.

Question. How do you pronounce the name of Sir Frederick Leighton's picture "Lachrymae," and what does it mean?

Answer. The name is pronounced, *lack'-re-may.* The word is Latin, and it means "tears" or "grief." There is no particular story, that we know of, connected with Sir Frederick Leighton's painting. It is an impressive and affecting impersonation of sorrow, represented by a beautiful female figure clad in black, leaning on a broken column. The original painting is in the Metropolitan Museum of Art, New York.

Question. What is the "Fountain of Youth?" Is it a real place?

Answer. The Fountain of Youth was a mythical spring supposed by some of the Indians of Central America and the West Indies to exist in a region called "Bimini." It was said of the Fountain that its waters would restore youth to the aged and heal the sick. It appears that before the discovery and the conquest of the Western Hemisphere by the Whites, Indians made expeditions to Florida and the Bahamas in search of the Fountain of Youth, and the Spaniards, under Ponce de Leon, Navarrez, De Soto and others, penetrated into the interior of the continent, seeking for it during the early part of the sixteenth century. Similar stories about a mythical Fountain of Youth have been found in India and the Pacific Islands.

Question. Do Presidential Electors and Delegates to National Conventions receive any salaries?

Answer. Members of Presidential Electoral Colleges are not looked upon as Federal officers, but as acting for the States. They have neither Federal nor State salaries, but are usually allowed their expenses to the meeting of the College of Electors in their State. As far as delegates to National Conventions are concerned, I can speak from experience, having been a delegate at large from Massachusetts to the National Convention of the Republican Party to Chicago in 1912. I am able to assure you that delegates get no pay either from the State or the party, and have the pleasure of meeting their own expenses. (This answer comes from Professor Albert Bushnell Hart, of Harvard.)

Question. What is the meaning of the phrase on the title page of books, "All rights of translation into foreign languages reserved, *including that of Scandinavia*"?

Answer. This is done because the Scandinavian nations did not enter into the general covenant in which other nations engaged to protect copyrights. The rights of translation of a book are covered by a general covenant and the nations of Europe and America are bound by this covenant—all except the Scandinavian. It is necessary, therefore, to make a separate provision for Scandinavian protection. This is the reason that the special phrase is inserted notifying all that Scandinavian protection has been secured.

Question. Who was the original of Gainsborough's famous portrait called "The Blue Boy"?

Answer. The "Boy Blue" of Gainsborough is not, as many suppose, a lad of noble birth. He was the son of a well-to-do English iron-monger—Jonathan Buttall by name. He may or may not have been a beautiful boy. Gainsborough had a way, however, of conferring loveliness on his subjects. He portrays Master Buttall, erect and smiling, with a "grown-up manner," and the dignity of a young prince. It is a triumph in the art of portrait painting.

Question. What is the meaning of "Chamber Music" and of "Program Music"?

Answer. "Chamber Music" is the term used for musical pieces played by a group of musicians too small in number to be called an orchestra. Chamber Music is such music as is especially fitted for performance in a small room or chamber than in a large concert room, church or theater. Most frequently these pieces of music are for a few players of string instruments—quartets, quintets, etc., either with or without piano. "Program Music" is descriptive music depicting or suggesting scenes or incidents like a thunder storm, the babbling of a brook, the singing of birds, etc., together with whatever poetic fancy may be associated with it by the composer. (These replies come from Mr. Henry T. Finck, Music Critic of the New York *Evening Post.*)

Question. How did we come to get the word "Windfall" as an expression for good luck?

Answer. The origin of this word goes back to the time of William the Conqueror, when cutting down timber in the forest was punished as a crime. Only those trees could be cut and gathered that the wind had blown down. For this reason a hard windstorm was counted by the poor people as just so much good luck. It meant broken limbs and fallen trees—consequently free timber.

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We have known for years the Irishman of song, story and stage—as we have found him in the sentimental verses of Thomas Moore, in the "Handy Andy" of Samuel Lover, and "Conn the Shaugraun" of Dion Boucicault; the Irishman of the brogue, the quick wit, the blarney, the brandished shillelagh; or the devil-may-care gentry of "Harry Lorrequer" and similar novels; and the romantic stage-heroes impersonated by Barney Williams, Murphy and Chauncey Olcott.

But the pages of history have turned. In the last quarter-century, a new spirit has infused Irish life and literature, and the poets, novelists and play-writers have wakened to the light of a "Celtic Dawn." There is a new creed in Irish art, and W. B. Yeats is its prophet and high priest.

★ ★ ★

The new movement was prompted by a desire to create a purely national art in literature that would fully express the feeling and thought of the Irish people—the spirit of the race. This movement was to draw its inspiration from the old traditions, the folk-lore, and the actual living conditions of Ireland.

The first material for this new movement —we might say the propaganda of it—was afforded by Douglas Hyde's "Book of Gaelic Stories" (1889). The next year, W. B. Yeats wrote: "A true literary consciousness—national to the center—seems gradually to be forming. We are preparing for a new Irish literary movement." In 1892 Yeats founded the National Literary Society in Dublin—and authors and books, in Dublin, London and New York, began to appear. Then, in 1899, came the Irish Literary Theater—also largely a Yeats enterprise, in which, however, he had the invaluable support of Lady Gregory and Edward Martyn, a wealthy Irishman.

And then came the rest—poets, novelists, and dramatists, full of eager hope and ambition, and many of them gifted with rare genius. They differ in their methods of expression. Some of them, influenced by Yeats and Douglas Hyde, urge the use, not of cultivated English, but of Anglo-Irish, the language of the people, the simple, direct and forceful expression of elemental Irish life and experience. Others, not willing to forego the accumulated benefits of culture, are idealists, and like Lord Dunsany, work in the realm of imaginative poetry and romance. Still others, like Synge, author of "The Playboy of the Western World," contend that play should not attempt to teach or preach, but should simply picture actual life, and "have its roots firmly fixed in homely reality."

W. B. YEATS
Leader in the movement for an Irish national literature

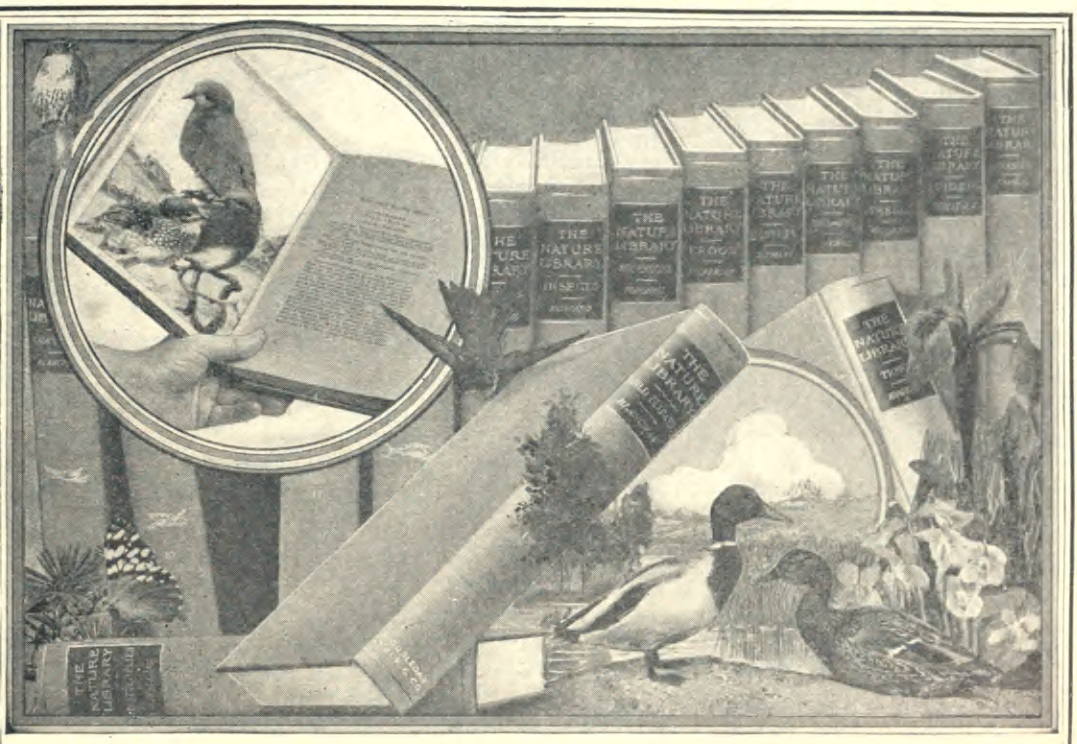
★ ★ ★

The Irish Literary Theater led to the National Theater Society, which began its interesting career in the Abbey Theater in Dublin, in 1904. There, many plays were produced, some of which we saw when the Irish Players visited the United States in 1911.

The influence of the Irish Revival in literature has been widespread and wide felt. The authors identified with the movement are too numerous even to mention here. Besides Yeats there is George Moore—though he has gone back to his novels—Martyn, Lady Gregory, W. K. Magee (John Eglinton), J. M. Synge, Lennox Robinson, T. C. Murray, George Fitzmaurice, St. John Ervine (author of "John Ferguson" and "Jane Clegg"), and others; and, in fiction, folk-lore and other prose—besides George Moore, James Stephens, Shan Bullock, Dora Sigerson, Moira O'Neill, William Sharp (Fiona MacLeod), and many, many besides.

In their own individual ways, all these writers have contributed to the new literary movement. We may call it a revolution if we choose, but it is intellectual and moral rather than political. Yeats voiced the original spirit of it when he said: "We would have Ireland recreate the ancient arts, the arts as they were understood in Judea, in India, in Scandinavia, in Greece and Rome, in every ancient land; as they were understood when they *moved a whole people*, not just a few of the leisure class."

W. D. Moffat



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THE MENTOR

Statement of the Ownership, Management, Circulation, etc., required by the Act of Congress of August 24, 1912, of The Mentor, published monthly at New York, N. Y., for April 1, 1921. State of New York, County of New York, ss. Before me, a notary public in and for the State and county aforesaid, personally appeared Lee W. Maxwell, who, having been duly sworn according to law, deposes and says that he is the General Business Manager of The Mentor, and that the following is to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit: (1) That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, The Crowell Publishing Company, 381 Fourth Avenue, New York, N. Y.; Editor, W. D. Moffat, 114-116 East 16th Street, New York, N. Y.; Managing Editor, Guy P. Jones, 114-116 East 16th Street, New York, N. Y.; General Business Manager, Lee W. Maxwell, 381 Fourth Avenue, New York, N. Y. (2) That the owners are (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock) The Crowell Publishing Company, a Delaware Corporation, New York, N. Y.; American Lithographic Co., New York, N. Y.; Employees' Savings & Profit Sharing Pension Fund of The Crowell Publishing Company, New York, N. Y.; Gardner Hazen, New York, N. Y.; George H. Hazen, New York, N. Y.; Joseph F. Knapp, Trustee, New York, N. Y.; Joseph P. Knapp, New York, N. Y.; Antoinette K. Milliken, New York, N. Y.; Lucien Oudin and Henry G. Schackno, Trustees for Louis Ettlinger, New York, N. Y.; John S. Phillips, New York, N. Y.; Henry K. Pomroy and H. Arthur Pomroy (both residents of New York City, N. Y.); and A. H. Lockett (a resident of Englewood, New Jersey), partners doing business under the name of Pomroy Bros.; Post Securities Corporation, New York, N. Y.; J. Walter Thompson, New York, N. Y. Samuel Untermeyer, New York, N. Y. (3) That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities, are: None. (4) That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation from whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustee, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him. (5) That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is (This information is required from daily publications only.) Lee W. Maxwell, General Business Manager. Sworn to and subscribed before me this 23rd day of March, 1921. Mary B. Lambkin, notary public, New York County. New York Register No. 9035. My commission expires March 30, 1921.)

Have you mastered these new words?

vitamine	Bolsheviki	escadrille	ace	Taube
Freudian	camouflage	fourth arm	tank	Boche
Rotarian	ukulele	Soviet	lorry	brisance

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WOMAN

By RABINDRANATH TAGORE

OFFICIALLY NOTED

CREATIVE expressions attain their perfectness through emotions modulated. Woman has that expression natural to her, the cadence of restraint in her behavior, producing poetry of life. This has been an inspiration to man, guiding most often unconsciously, his restless energy into an immense variety of creations in literature, art, music and religion. This is why in India woman has been described as the symbolism of Sakti, the Creative Power.

LE OF KASHMIR

But if woman begins to believe, and to behave accordingly, that, though, biologically, her function is different from that of man, psychologically she is one with him; if the human world in its mentality becomes exclusively male, then before long it will be reduced to utter insanity. For life finds its truth and beauty not in any exaggeration of sameness, but in harmony.

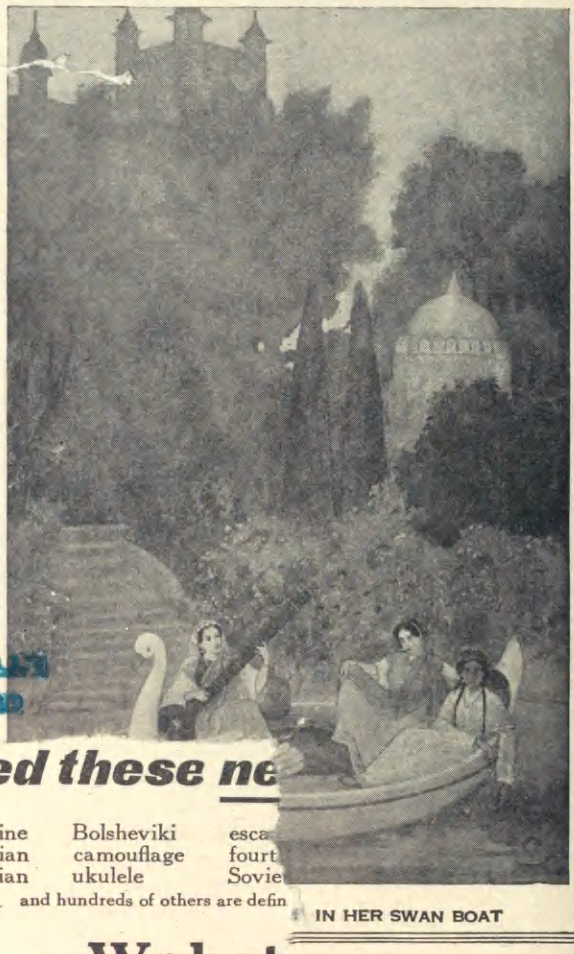
It would only give rise to a monotonous superfluity if women's nature were identical with men's, if Eve were a mere tautology of Adam. But that she was not so was proved by the banishment she secured from a ready-made paradise. She had the instinctive wisdom to reserve that it was her mission to help her mate in creating a paradise of their own on the earth, whose ideal she was to supply with her life, and whose materials were to be produced and gathered by her comrade.

However, it is evident that an

increasing nu[illegible] of women in the West are ready to assert that their difference from men is unimportant. The reason for the vehement utterance of such a paradox cannot be ignored. It is the rebellion against a necessity which is not an equal necessity for both the partners.

Love in all forms has its obligations and the love that binds women to their children binds them to their home. But necessity is a tyrant making us submit to injury and indignity, allowing advantage over us to those who are wholly or comparatively free from its burden. This has been the case in the social relationship between man and woman. Along with the difference inherent in their respective natures, have grown up between inequalities fostered by cumstances. Man is handicapped by the same logical and psychological ties as woman and the liberty to give her home. This liberty exists when it offers its boon to give it or to withhold power. Such unequal their mutual relations the weight of life's tragedy heavy upon woman.

Some mitigation of her disadvantage has been effected by her rendering herself and her home a luxury to man. She has accentuated those qualities in herself which insidiously impose their bondage over her mate,



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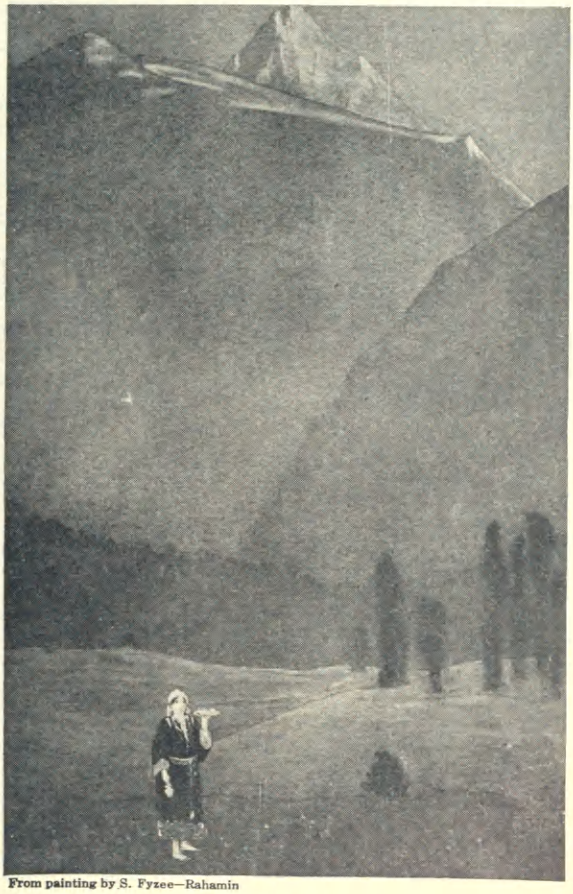
ding New Words and 100 Valuable Table nd results in exuberance ts. Capitalization of Pr S. But a great deal of Synonyms

it is a forced growth of compulsion bearing seeds of degradation. In those ages when men acknowledged spiritual perfection to be their object, women were denounced as the chief obstacle in their way. The constant and conscious exercise of



From painting by S. Fyzee—Rahamin

THE VALE OF KASHMIR

allurements, which gave them their power, attacked the weak spots in man's nature, and by doing so deepened and widened its weakness. For all relationships tainted with repression of freedom must become sources of degeneracy and danger to the strong, who imposes them.

However, balance of power between man and woman was, to a certain measure, established when home wielded strong enough attractions to make men accept its obligations. But at last the time has come when the material ambition of man has assumed such a colossal proportion that home is in danger of losing its center of gravity for him, and he is receding further and further from its orbit.

From the beginning of our society, women have naturally accepted the training which imparts to their life and to their home a spirit of harmony. It is their instinct to perform their services in such a manner that these, through beauty, might be raised from the domain of slavery to the realm of grace. The women have tried to prove that in the building up of social life they are artists and not artisans. But all expressions of beauty lose their truth when compelled to accept the patronage of the gross and the indifferent. Therefore, when necessity drives women to fashion their life to the taste of the insensitive or the sensual, then the whole thing becomes a tragedy of desecration. Society is full of such tragedies. A great part of the laws and social regulations guiding relationship of man and woman are relics of a barbaric age when the brutal pride of an exclusiveness of possession had its predominance in human relations, such as those of parents and children, husbands and wives, masters and servants, teachers and disciples. The vulgarity of it still persists in the social bond between sexes because of the economic helplessness of woman. Nothing makes us so stupidly mean as the sense of superiority which power of purse confers upon us.

From painting by S. Fyzee—Rahamin

NAUTCH DANCE AT THE COURT OF GAEKWAR OF BARODA

The power of muscle or of money has opportunities of immediate satisfaction, but the power of an ideal must have infinite patience. The man who sells his things or fulfils his contract is cheated if he fails to realize payment, but he who gives form to some ideal may never get his dues and yet be paid. What I have felt in the women of India is the consciousness of this ideal, their simple faith in the sanctity of devotion lighted by love which is held to be divine. The true womanliness is considered in our country as saintliness of love. It is not merely praised there but literally worshiped; and she who is gifted with it is called *Devi*, as one revealing in herself Woman the Divine. That this has not been

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HIGH-CASTE CALCUTTA WOMEN

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A CALCUTTA BATHING RESORT—THE KALI GHAT

The picture is typical of any Indian ghat, or bathing place. Bathing is a most important function in the life of India, not as a matter of hygiene or diversion, but as a religious duty. At Benares, the most favored place for entering the sacred Ganges River, the water teems with thousands of pilgrims who come daily to wash away their sins.

a mere metaphor to us is because in India our mind is familiar with the idea of God in his eternal feminine aspect. Thus the Eastern woman who is deeply aware in her heart of the sacredness of her mission is a constant education to men. It has to be admitted that there are chances of such influence failing to penetrate the callousness of the coarse. But that is the destiny of all revelation of the perfect whose value is not in success or reward in honor.

SREEMATI SWARNA KOOMARI DEVI. THE SISTER OF RABINDRANATH TAGORE, WELL KNOWN HINDU AUTHOR

Women have to be ready to suffer. She cannot allow her emotions to be dulled or polluted, for these are to create her life's atmosphere, but for which her world would be dark and dead. This leaves her heart without any protection of insensibility, at the mercy of hurts and insults of life. Women of India, like women everywhere, have their share of suffering. But it radiates through an ideal, and becomes, like sunlight, a creative force in their world. Our women know by heart the legends of the great women of the epic age,—Savitri who, by her power of love, conquered death, and Sita who had no other reward for her life of sacrifice but the sacred majesty of sorrow. They know that it is their daily duty to make this life an image of the eternal life, and that love's mission truly performed has a spiritual meaning. It is a religious responsibility for them fully to live the life which is their own. For their activity is not for money-making, or organizing power or intellectually probing the mystery of existence, but for establishing and maintaining human relationships requiring highest moral qualities. It is the consciousness of the spiritual character of their life's work which lifts them above the utilitarian standard of the immediate and the passing, surrounds them with a dignity of the eternal, and transmutes their suffering and sorrow into a crown of light.

I must guard myself from the risk of a possible misunderstanding. The permanent significance of home is not in the narrowness of its enclosure, which is non-essential, but in an eternal moral idea. It represents the truth of human relationship, loyalty and love for the personality of man.

With the discovery and development of agriculture there came a

STUDENTS IN SCHOOL AT GURUKUL, HARIDWAR, INDIA

To this school boys go — sometimes from distant homes — for a period of ten to fifteen years, and they receive here a thorough course of instruction under strict and rigorous scholastic discipline

RABINDRANATH TAGORE'S MODEL SCHOOL AT BOLPUR, INDIA

Dr. Tagore may be seen seated — indicated by a cross on the left sleeve. His son stands in the back row, next to end at the left

period of settled life in our history. The nomad ever moved on with his tents and cattle, he explored space and exploited its contents. The cultivator of land explored time in its immensity, for he had leisure. Comparatively secured from the uncertainty of his outer resources he had the opportunity to deal with his moral resources in the realm of human truth. This is why agricultural civilization, like that of India and China, is essentially a civilization of human relationship, of adjustment of mutual obligations. It is deep-rooted in the inner life of man and its basis is co-operation and not competition. In other words, its principle is the principle of home to which all its outer adventures are subordinated.

Copyright, International From a painting by the English artist, J. C. Ayers

A KASHMIR BEAUTY

In the meantime the nomadic life with its predatory instinct of exploitation has developed into a great civilization. It is immensely proud and strong, killing leisure and hunting for opportunities. It minimizes the claims of personal relationship and is jealously careful of its unhampered freedom for acquiring wealth and asserting its will over others. Its burden is the burden of things, which grows heavier and more complex every day, disregarding the human and the spiritual. Its powerful pressure from all sides narrows the limits of home, the personal region of the human world. Thus women are every day hustled out from their shelter for the want of accommodation.

But this can never have the effect of changing woman into man. On the contrary, it will lead her to find her place in the unlimited range of society, and the Guardian Spirit of the personal man will extend her ministry over all developments of life. Habituated to deal with the world as a machine, man is multiplying his materials and banishing away his happiness, sacrificing love to comfort which is an illusion. At last the present age has sent its cry to woman, asking her to come out from her segregation, to restore the spiritual supremacy of all that is human in the world of humanity. She has been aroused to remember that womanliness is not chiefly decorative, but it is like vital health which not only imparts beauty's bloom to the body but joy to the mind and perfection to life.

PICTURESQUE INDIA

WITH DESCRIPTIVE CAPTIONS
By BASANTA KOOMAR ROY

BEGUM ATIYA FYZEE-RAHAMIN OF BOMBAY

Wife of the artist, and a leading feminist of India. She was the first Mohammedan woman of education and aristocratic family to come out of seclusion. Once she was even stoned by her co-religionists in the streets of Lucknow, but now she is admired and respected all over India. She is an authority on Hindu music. She has written a charming book on the subject, profusely illustrated by her husband

Photo by V. Cella

"THE HIMALAYAS, FLUSHED WITH THE MORNING GOLD" — KIPLING

The Himalayas (the Home of Snow), the highest mountains in the world. The loftiest peak, Mount Everest, is 29,002 feet high. No human being has yet reached the top of the Himalayas. The hills, and the dales and the passes of this majestic mountain are associated with a thousand and one historic and mythological legends of the Hindusthanees.

ON THE RIVER JHELUM IN ENCHANTED KASHMIR

Poets of many lands have sung rapturous songs on Kashmir, that has been reared on the affectionate lap of the Himalayas. The picturesquely lyrical river Jhelum is like a pearl necklace around the neck of Kashmir, and it appears at its best at Srinagar.

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THE GREAT BANYAN TREE IN THE BOTANICAL GARDENS OF CALCUTTA

This is the largest banyan tree in the world. It is said that an army can easily rest under its sheltering branches. The main trunk is about 60 feet in circumference. Hundreds of air roots descend from its branches to the ground.

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A BATHING GHAT ON THE GANGES AT BENARES

Pilgrims come from distant corners of India to bathe at this sacred Manikarnika ghat. Thousands during the day chant hymns to Siva and Parvati, to Rama and Krishna, to the Sun and the Moon as they bathe and swim in this sacred river of the Hindus. This long river makes its most poetic half-moon curve at this point.

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CATCHING ELEPHANTS ALIVE

Trapping elephants is one of the most exciting of sports in the jungles of India, that teem with almost endless varieties of animals, birds and reptiles. When first caught, the elephants shake the woods with their infuriated agony of bondage; but soon they become docile and friendly with man, his master.

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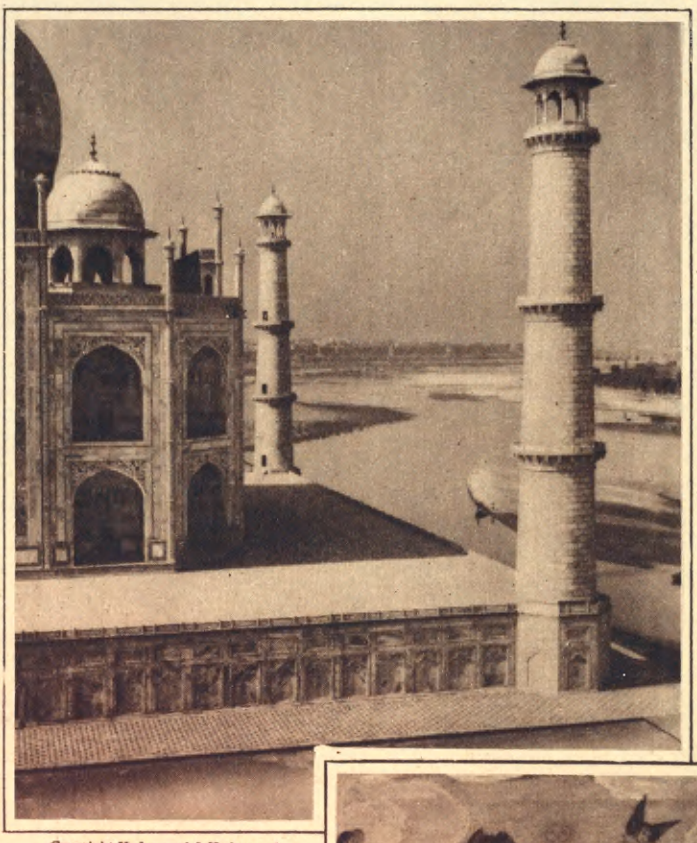
THE STATE CHARIOT OF A HINDU PRINCE

The fabulously precious caparisons on the stately elephants, and the incredibly sumptuous decorations on the prince's chariot are among the rarest sights of imposing splendor in the gorgeous East. A million dollars in jewels and decorations on elephants and chariot here.



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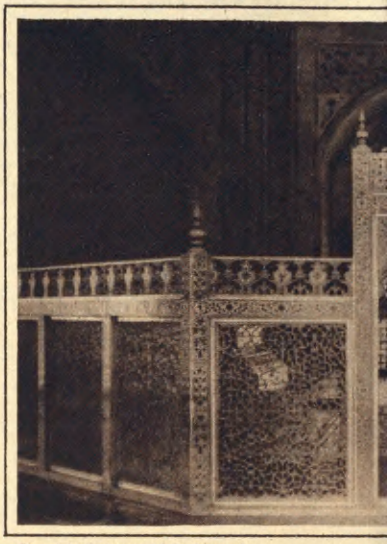

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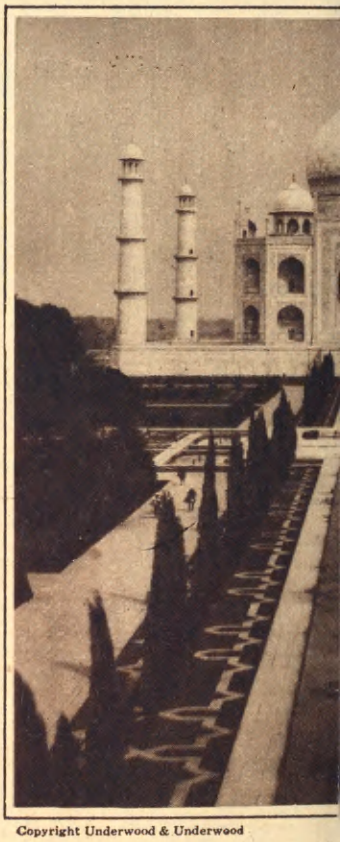
The Taj-Mahal, the most beautiful tomb in the world and one of its architectural marvels, was built by the Mogul Emperor, Shah Jehan, to house the body of his beloved wife, Taj Bibi, Mumtaz-i-Mahal. Twenty thousand workmen toiled twenty-two years to complete it. A "dream in marble, designed by Titans and finished by jewelers" it appears from every viewpoint. The first picture in the upper row shows the Taj from

After a Picture in the Metropolitan Museum of Art



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HE LOVED HER SO HE MADE I
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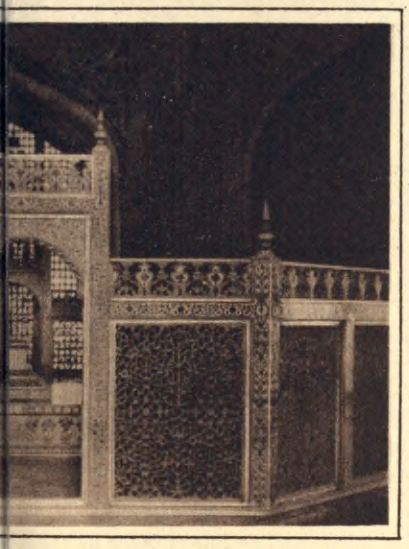

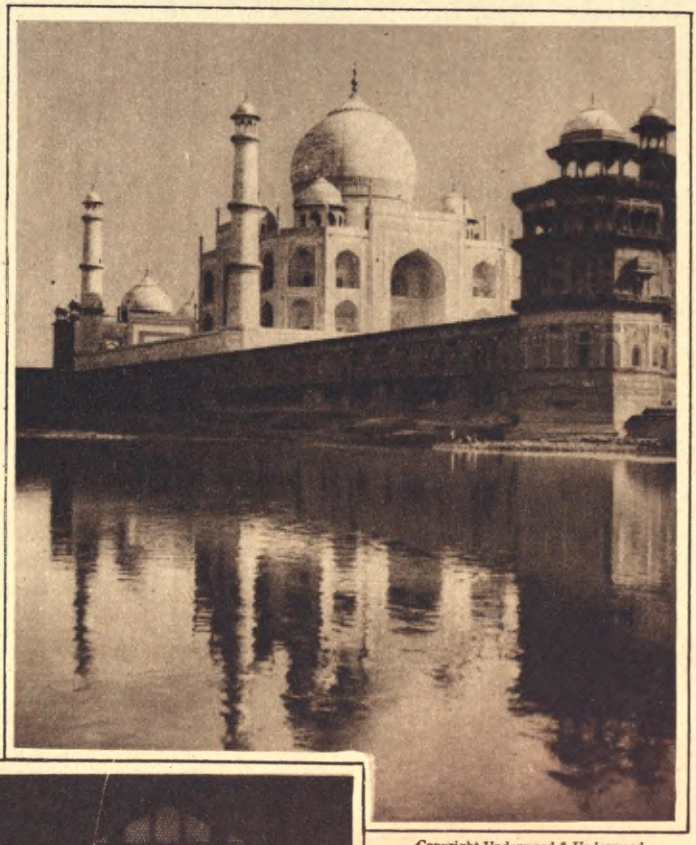

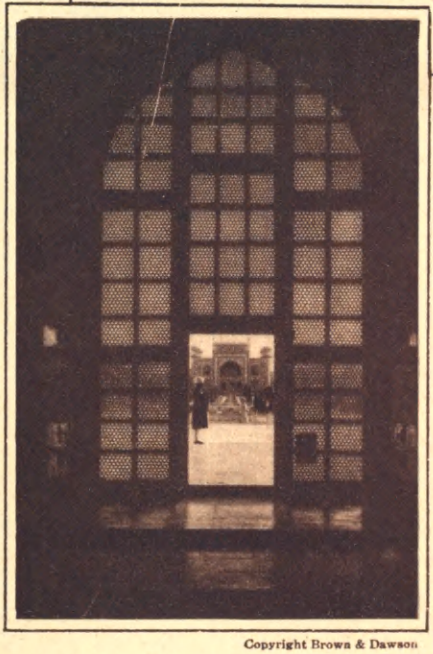

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the Jumna River; the second, a marble screen typical of the interior; the third, another up-river view showing the size of the building. The first picture in the lower row is a reproduction of an Indian painting of Shah Jehan; the second, a general view of the Taj and its black and white marble approaches; the third, a glimpse of the approach seen through the exquisite tracery of an entrance in the front of the building.

HR TOMB THE MOST EXQUISITE EM IN THE WORLD

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THE GAEKWAR'S CANNON OF GOLD

In the grounds of the magnificent palace of His Highness the Gaekwar of Baroda there are two cannons of solid gold weighing 280 pounds each. On state occasions they are carried on wagons made of solid silver. The harness and the ramrods are of silver, too. Precious jewels adorn the horns of the bullocks, and pieces of [illegible]

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THE GOLDEN TEMPLE AT AMRITSAR

This is the sacred temple of the Sikhs, a religious sect of India founded by Guru Nanak who lived from 1469 to 1539. Nanak's idea was to unite the Hindus and the Mohammedans in one common faith. The tolerant Mogul Emperor Akbar liked this creed, and in 1577 presented to the fourth Guru the site of the pool at the center of which stands the temple.

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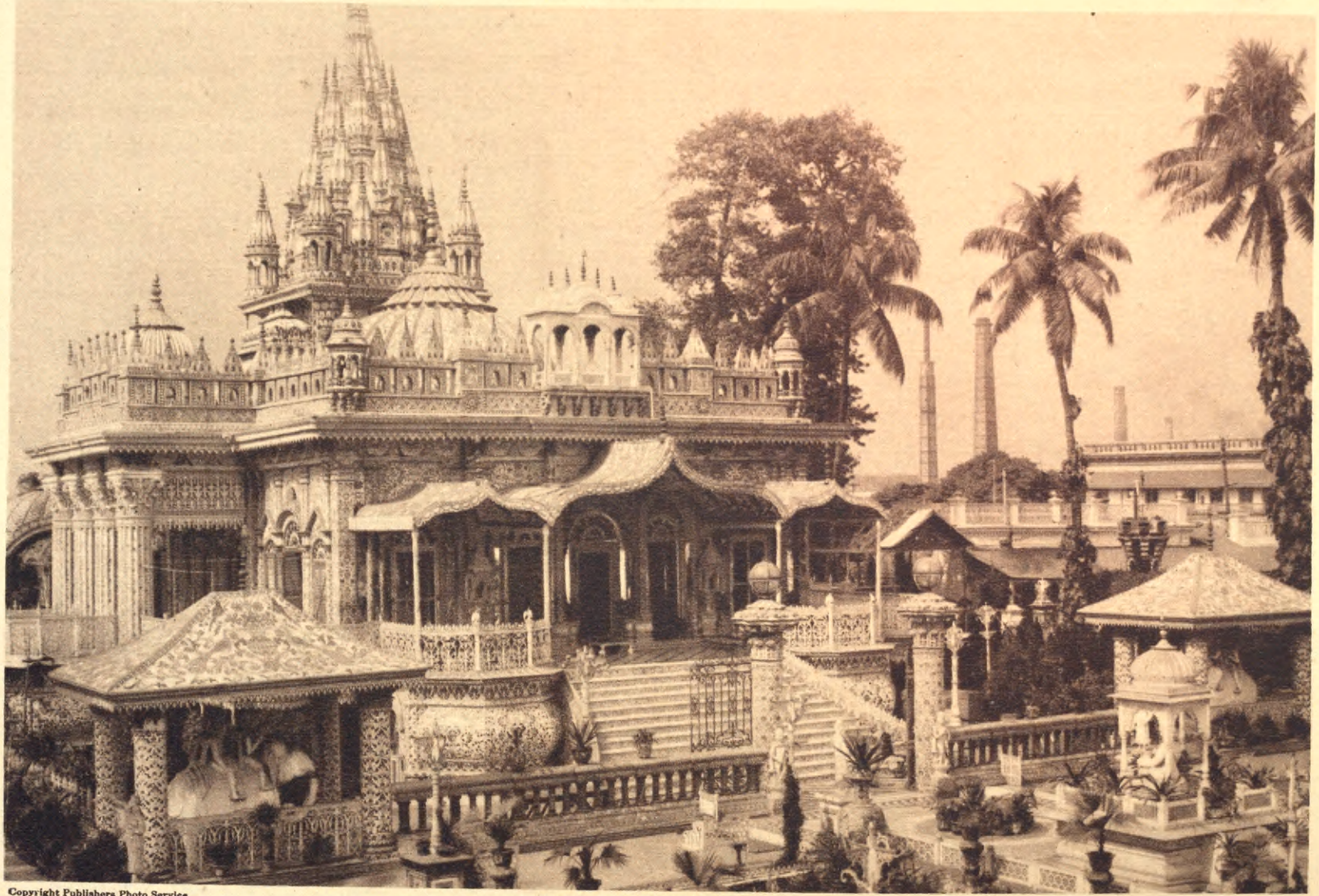
THE BADRI-DAS PALACE IN CALCUTTA

This is the home of the builder of the Jain temple in Calcutta; and it is one of the most beautiful mansions in the "City of palaces." Badri-Das made his money oy selling jewels. He built and supports several hospitals for animals.



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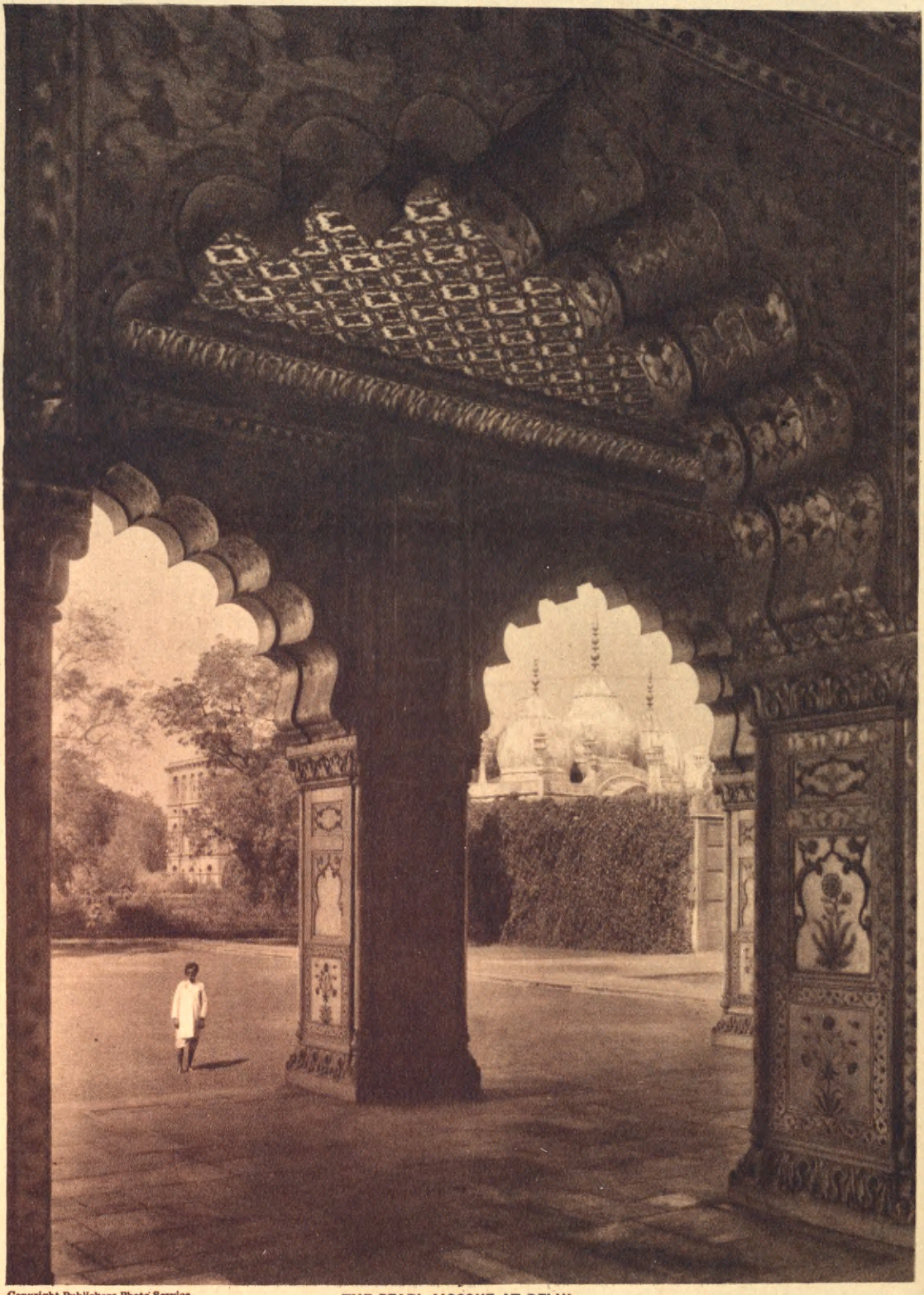
THE JAIN TEMPLE IN CALCUTTA

It is, in fact, a shrine of art breathlessly burdened with beauty. The Jainas are akin to the Buddhists in faith. Harmlessness is one of their principal virtues. They are purely vegetarians. The orthodox among them do not even light lamps at night, lest insects destroy themselves in the fire.



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THE PEARL MOSQUE AT DELHI

The Indian name for this mosque is Moti Masjid. It has been called "the daintiest little building in all India, a veritable pearl of price." The arches are Saracenic, and the domes are among the most artistic in all the world. It was built in 1635 by Aurangzeel, the son of the builder of the Taj Mahal.

Publishers Photo Service **THE FAMOUS MARBLE SCREEN IN SHAH JEHAN'S PUBLIC HALL OF AUDIENCE AT DELHI**

Architects and art critics agree that this marble screen that separates the harem from the hall of public audience is perhaps the most perfect piece of work of this kind in existence. And it decorates a building which in design and artistic decorations is one of the best of Shah Jehan's architectural dream structures.

PRATIMA TAGORE

The wife of Rabindranath Tagore's only son Rathindranath. She is a practical social reformer; and also a painter of numerous water colors of exquisite beauty and rare elegance.

OFFICIALLY NOTED

TAGORE WAS THE FAMILY FAILURE

In a country where earthly power is traditionally associated with gorgeous clothing, priceless jewels, pomp and ceremony, weighs 100 pounds and lives and dresses like the poorest workman in the land. He is Mohandas Karamchand Gandhi, son of the former prime minister to the Maharaja of Rajkot, leader of the East Indian movement for national independence.

Gandhi has been called the Tolstoy of India. He was a friend of the famous Rus-

ing. Rifles, bombs, machine guns and airplanes were used against the strikers.

Gandhi then organized the "non-cooperation" movement, a boycott of all things British in India. The people were called upon to return titles and awards of honor, Indian lawyers to cease practise in government courts and to settle all legal disputes by private arbitration; to refuse to participate in government loans; to boycott public schools; to refuse to accept civil or [illegible] posts in

RABINDRANATH TAGORE, "the most influential man in the Orient," was once considered by his brothers and sisters as the only intellectual failure in his family.

When a boy, he ran away from school. He refused to return. He told his father that schools were "prison houses."

Tagore's "playing hookey" did not result so disastrously as his father, the Maharshi (Great Sage) Debendranath Tagore, feared. For the great sage took his truant son to the Himalaya Mountains. There they lived and studied among the soaring, snow-covered peaks. The boy wandered by forest and stream and it was there that the seeds of poetic influence, which had manifested themselves when he was a child of four, began to germinate.

The young Tagore refused absolutely to return to school. In desperation his family sent him to London to study law. There he was more interested in the law of meter than that of Blackstone. He wrote love lyrics. So fiery were his first verses, Hindu Puritans were up in arms. Most of these have been weeded out of his published works.

Tagore is known best as a poet of love. His creed is found in this passage from the *Upanishads*, the early sacred writing of the Hindus: "From love the world is born, by love it is sustained, toward love it moves, and into love it enters." His best known poems are on woman, the child, the motherland, nature and the infinite, the "being, intelligence and bliss" of the Hindus.

Tagore's devotional songs are sung mostly by a Hindu sect that his father led. But Tagore's patriotic and love songs are the property of the people at large. Indian patriots sing them in the prisons and on the gallows.

In western countries, Tagore's poetry is most popular with women. His dramatic personality, his so-called mysticism, in which most women glimpse reflections of their own spiritual cravings, are mainly responsible for this vogue. In a civilization where man's energies are devoted to winning a living in a fiercely competitive world, woman is allotted the task of making the home and mothering his children. Having the same inherent energy as man and having been forced for generations to confine it to one field of human activity, the home, women give eager recognition to poetry that mirrors their unrest and aspirations. Those that do not entirely under-

OFFICIALLY NOTED

For fifteen years Tagore has devoted virtually all of his time and money to the maintenance of a model school which he [illegible] at Bolpur. Two hundred students

the life that civilization has made for them. To the average man, whose scheme of things demands devotion of his entire activity, outside of the home, to "getting up in the world"—a struggle so intense that he has had little or no time even to acquire sufficient understanding to know what the poet is talking about—Tagore is frankly incomprehensible.

Tagore is "mystical" only to those that do not take the trouble to understand his writings. The thoughts he projects are simple enough, but, to a person ignorant of the religions, history and folklore of India, or, for that matter, the world, his writings are either apparently heavy with hidden meanings or unintelligible. The current western idea that there is but one way to happiness—"getting up in the world"—also makes it difficult for western men, and very often western women, to understand a poet to whom this practical philosophy is as incomprehensible as his eastern philosophy is to them. Moreover, Tagore's writings are so exalted in expression and poetic in feeling that readers limited to the literalness of work-a-day language and ideas have neither the equipment nor patience to understand him.

Picture painted by Abanindranath Tagore, illustrating a romantic poem by the great Hindu poet Kalidasa. It pictures the King Taksha in exile.

RULES MILLIONS—LIVES LIKE WORKER

THE man whose word sways millions in a country where earthly power is traditionally associated with gorgeous clothing, priceless jewels, pomp and ceremony, weighs 100 pounds and lives and dresses like the poorest workman in the land. He is Mohandas Karamchand Gandhi, son of the former prime minister to the Maharaja of Rajkot, leader of the East Indian movement for national independence.

Gandhi has been called the Tolstoy of India. He was a friend of the famous Russian novelist, the similarity of their beliefs having drawn them together when Gandhi was a young man fighting for the betterment of conditions of East Indians in South Africa.

Gandhi had money and gave it away. He practised law and gave it up because it hurt his conscience. He dresses like a workman and eats only fruit and rice.

Strangely enough, India's greatest fighter is a worker for peace and peace is his most effective weapon against the British.

When India was placed under virtual martial law by the Rowlatt Act in 1919, as a result of the agitation for freedom, Gandhi ordered a general strike throughout the land. Vigorous measures were taken by the government to break the strike, culminating in trouble at Amritsar where 500 natives were killed and 1500 injured when fired on while demonstrating. Rifles, bombs, machine guns and airplanes were used against the strikers.

MAHATMA MOHANDAS, KARAMCHAND GANDHI
India's pacifist-revolutionist

Gandhi then organized the "non-cooperation" movement, a boycott of all things British in India. The people were called upon to return titles and awards of honor, Indian lawyers to cease practise in government courts and to settle all legal disputes by private arbitration; to refuse to participate in government loans; to boycott public schools; to refuse to accept civil or military posts in Mesopotamia; to refuse to buy British goods; to resign all police and military posts and to refuse to pay taxes to the British government in any shape or form.

The Indian National Congress has adopted Gandhi's plan as its national duty.

Gandhi's leadership is largely spiritual. He has won the confidence and respect of all classes. The simplicity of his personal life explains his hold. He first put the passive resistance plan into operation as a protest against the way his countrymen were being treated in South Africa. He and his followers went to jail frequently. He advised his followers to desist from violence at any cost, and follows the same tactics in the present movement.

Gandhi is 52 years old. He is editor of "Young India," (English) and the "Nava Yuga," (New Age) in native language.

"CHIPS OF JADE"

FOLK-SAYINGS FROM CHINA AND HINDUSTAN, RHYMED IN ENGLISH

By ARTHUR GUITERMAN

The Starveling Cat maintains the Firm Belief
That every Well-fed Cat must be a Thief.

How small the Heavens are, the Frog can tell;
He's seen them—from the Bottom of the Well.

Two Friends have I—True Friends, I know;
But which a Deeper Love discloses.
This, brings me Coals in Winter's Snow,
While That, in Summer, brings me Roses.

If Right, though Right without a Flaw
Is ALL you have, don't go to Law.

This One Makes a Net,
That One Stands and wishes;
Would you like to bet
Which One gets the Fishes?

You "Nearly Did It"? That's your loss.
I'll pay you just the Fare
Due him that rowed me half across
The Stream—and left me there.

Little Tasks need Little Force;
Any Fool can make a Fan.
Leagues of Travel prove the Horse,
Years of Service prove the Man.

The Monkey jeers; such odd Mistakes
In Weaving Sticks, the Pigeon makes!
But while the Monkey has his Jest,
The Pigeon learns to Build a Nest.

So Clever a Son of a Clever Man's Daughter
Am I, that an Abler Man fetches my Water.

If Prayers of Dogs were heard at all,
What Showers of Bones from Heaven would fall!

The Fool met Fate. "Fair Maiden, say,
Where goest thou?" quoth he.
And Fate replied, "Hold on thy Way,
O Fool, I follow thee!"

Avoid Suspicion: When you're walking through
Your Neighbor's Melon-patch, don't tie your Shoe.

If You suspect him,
Then Reject him;
If you Select him,
Don't Suspect him.

Four Eyes to spy the Faults of Men,
Four Ears to catch all Words of Spite,
Two Tongues to pay them back again—
You'll need at least Eight Hands to fight!

"Who cooked this Rice?"
"Not I!—that Worthless Hound!"
"'Tis very nice."
"Why—yes—I stirred it round!"

Though gentlest Hands re-knit the silken Chain
Of Severed Friendship, still the Knots remain.

Whose Hands are clever, labors all his Days;
Whose Tongue is clever, speaks—the World obeys.

Fair is the Hope of a Distant Day;
Blue are the Hills that are far away.

Who sells Grain is a Merchant. Heed ye, then:
Who hoards Grain is a Murderer of Men.

"EVERY TRUTH HATH A PROPHET TO PROCLAIM IT"

*** Extracts by courtesy of E. P. Dutton & Co., publishers.

WHAT WAS SHE DOING WITH HER ARMS?

THE question is still unsolved, although one hundred and one years have elapsed since the simple peasants in the Island of Melos made their discovery of this superb antique statue. What an opera-bouffe story the discovery makes! A French man-of-war stood in the harbor of Castro at just the psychological moment and the commander, on seeing the wonderful statue, rushed to Constantinople with the news. The French Ambassador there delayed matters so that, when at last the French schooner, that had been detailed for the enterprise, arrived in the harbor they saw a brig flying the Ottoman flag in the road-stead, and, through a telescope, the commander saw Turkish sailors carrying something white—and very heavy—on a litter. Then occurred the "battle of the sands," for a boat-load of French marines were dispatched as soon as they were in shore. In the excitement the Statue was broken and the debris was collected with as much care and haste as possible, and rushed onto the French schooner, but, dreadful to relate, they found that the lower part—for the statue was made in pieces—was on the Turkish brig. There were only two things to do, sink the brig or yield to the more facile plan of giving up "*baksheesh*," which was a combination of hush money, blackmail and simple graft. In that way terms were made.

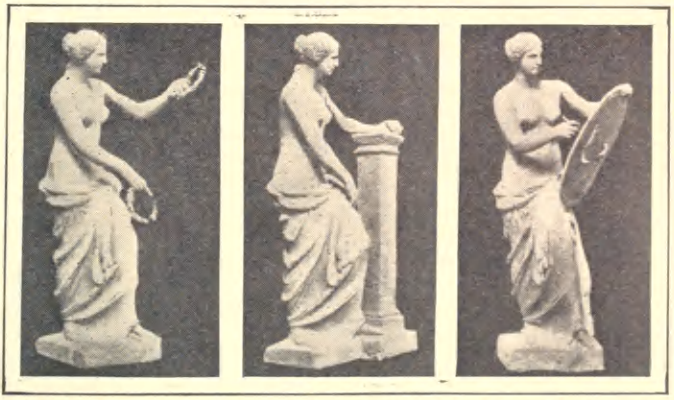
VENUS DE MILO

After the remains were got to Paris, the left hand was found to contain a round object, presumably an apple. It would really seem as though this ought to have settled the question then and there, but it didn't. The statue has been the subject of discussion in the language of all civilized countries.

The statue was at first believed to be by Praxiteles until the inscription on the pedestal gave it to an Antioch sculptor named Andros, but the inscription no longer exists, so that evidence is gone. The character of the writing, now lost, would place the work at about 100 B.C.

She has been credited with holding a spear, a shield and pencil, a mirror, two laurel wreaths, a dove as well as an apple, and lastly a plain apple. The last is probably the correct idea; the apple is the prize of beauty. The left hand holding the apple matches the fragment of the statue's arm in scale, material, technique: even the weathering and the dowel-hole in the arm correspond with that in the torso.

M. Jean Aicard, a Frenchman, wrote a book on the subject in 1874 and another book in 1912. This latter work aroused great interest and even staid newspapers joined their more sensational brethren, and published long articles with pictures and diagrams under such captions as "The End of a Mystery." A careful perusal of each of these works only gives the details of discovery and does not lead to any definite conclusion other than that the hand contained an apple. An examination of a score of other works gives equally unpromising result—so we come to a great blank wall of mystery. Beautiful, fascinating, troublesome marble woman! What were you doing with your arms—when you had them?—*A. A. Hopkins.*



"ARMS AND THE WOMAN"—THREE SOLUTIONS OF THE QUESTION

THE WOMAN BEHIND THE ARAB THRONE

AN American woman is the power behind the throne in a country where a woman does not count for much. She is Mrs. Anna L. Fisher, formerly of New York and California, now unofficial ruler of the Arab Kingdom of Syria which was created by the Allies as the result of the World War.

Mrs. Fisher is King Feisal's chief advisor; he has said that hers is the last word in affairs of state. Officially, Mrs. Fisher is a Captain in the Arab army, the first of her sex to hold such a post in a Mohammedan military force. Women are held to be of little importance in the Mohammedan scheme of things.

When the World War first set the nations of Europe at one another's throats, Mrs. Fisher joined the Red Cross for service in Armenia. She did relief work. So long as the United States was neutral, her American citizenship protected her, but, when American troops went across the Atlantic, her position became a dangerous one. Although the United States was not formally at war with Turkey, the Turks were dominated by Germany and hostile to America's allies. Mrs. Fisher's work earned her the goodwill of both Turk and Armenian and she was not harmed. The next military change put Armenia in the hands of Emir Feisal and his Arab army. Mrs. Fisher came into contact, for the first time, with the people she was later to rule.

CAPTAIN ANNA L. FISHER

The Arabs and the Arab national hopes fascinated Mrs. Fisher. She gave up home and companions in the United States and cast her fortunes with the Feisal cause, determined to devote her life to the advancement of her adopted people. When the Emir created the Syrian kingdom and declared himself king, he found in Mrs. Fisher an aide of force and dominating personality; he enlisted her services.

When the French forces moved on Damascus, Mrs. Fisher saved the city from the horrors of bombardment. She advised Feisal to surrender his capital and submit his claim to it to the League of Nations. The King and his forces withdrew to the hills, leaving Mrs. Fisher, the controlling force in Feisal government, in charge of affairs at the capital.

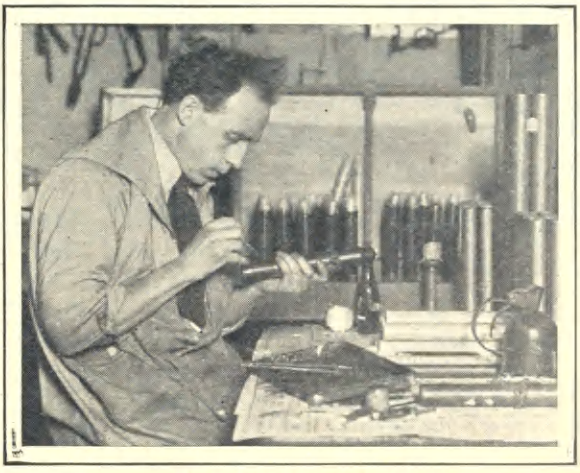
With Damascus filled with French troops and Feisal's claims awaiting the consideration of the League of Nations, Mrs. Fisher turned her efforts to building up the economic structure of the new country. During Feisal's active reign Mrs. Fisher had been head of all social service work; she organized schools where orphan children were taught to make clothes, caused an edict to be issued prohibiting Arab women from wearing European clothes, and encouraged native embroidering, weaving, rug and carpet making.

Administration of government affairs is in the hands of the French, so Captain Fisher's activities are now limited almost entirely to social service work for which her early Red Cross work has trained her.

Captain Fisher has been allowed to retain charge of the Syrian Orphanage where she has 600 wards. Whether or not Damascus is returned to Feisal or the new kingdom stands or falls, Mrs. Fisher will remain in the Near East and continue her work among the Arabs, she has announced. And, while the League considers Feisal's claims, this American woman, whose previous executive experience was confined to running a home, shapes the destiny of a people who had civilization when her undiscovered country was populated by savages.

MAKING THE CANDLE WORTH THE GAME

THE making of hand made, decorated candles—virtually a lost art—has been revived in the United States. Carl Walters, a Western artist who came to New York city to seek fame with paint brush and canvas, has remained to manufacture candles worthy of the beautiful candlesticks and sconces brought to America by the old-world pioneers.



THE CANDLE ARTIST

In Colonial days, the American house-wife made her own candles, or, if she lived in the larger cities, obtained them from the candlemaker. Little or no attention was given the candle; it was for lighting purposes only. Then came lamps, gas, and electric light. The candle passed from the average American home, but remained in many as a decoration. In recent years the use of the candle as a decoration has grown steadily. The machine-made, commercial candle cannot measure up to the handicraft of the fifteenth century candlemaker.

Wax candles were not always used purely as a source of light. The name candle comes from the Latin *candela*, which, in turn, came from the Latin *candere*, to glow. The Romans knew waxlights. In the Middle Ages, wax candles were little used because of the expense. Tallow dips ("rushlights") were commonly used. The waxen tapers were made for church and other ceremonials. There were two guilds making candles in Paris and London—the Tallowchandlers and the Waxchandlers. In the fifteenth century, wax became cheaper and the use of wax candles was extended to the home. During this period colored and decorated candles of rare artistry were made for church and palace, particularly in Venice; but little of the candlemaker's art has endured because of the perishable nature of the material he worked in.

Walters started making candles as the result of a trip to Cape Cod. There he saw bayberry candles being made by hand in the manner that the Pilgrim housewives practised. He had searched the market futilely for candles that fulfilled his artistic requirements; so decided to make some himself. He found that commercial, colored and church candles were produced in large amounts in the United States; in some cases church candles were "hand-dipped"; but there were neither tools nor molds to be had in the market. The artist made several sets of equipment and wasted large amounts of wax and color before he produced candles that suited him.

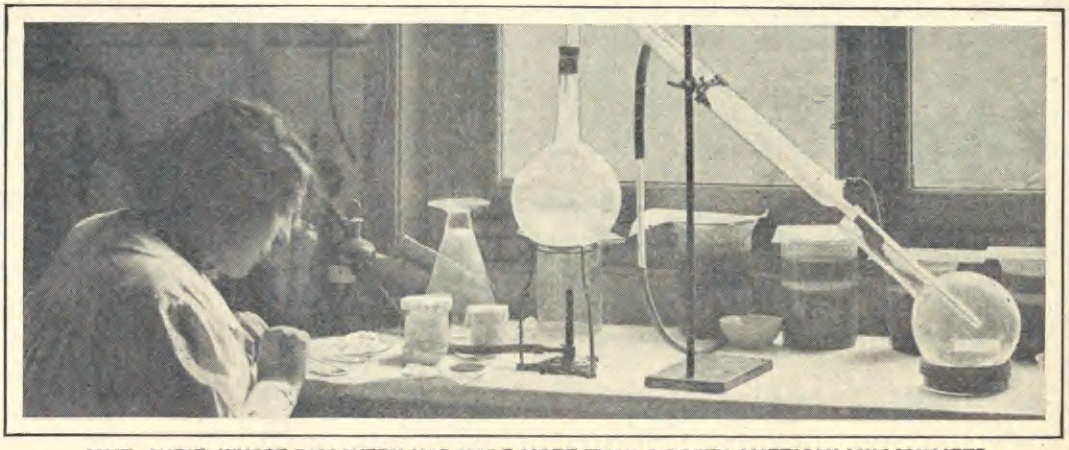
Walters first made candles for himself; then for his friends. Later, his candles became more widely known and the demand increased. It became a question as to whether he was to quit painting or candlemaking. There were effects in color that still eluded him, so he gave up painting for the time. A decorator came to him with a contract. Since then Walters has made thousands of candles.

Suggestions that he install modern machinery in his shop and speed up production draw a smile from Walters. "The hand process is the charm of the candles," he says. "If I made them by machinery in large quantities, they would lose much of their artistic merit."

In Walters' workrooms there are candles of every variety, short ones, tall ones, squat, slender, simple and ornate ones, candles of every hue and color.

Walters sells only candles that will harmonize with the sticks they are to occupy. If his shelves yield nothing, he makes the candle to fit the stick.

HER DISCOVERY MADE OTHERS RICH



MME. CURIE, WHOSE DISCOVERY HAS MADE MORE THAN A DOZEN AMERICAN MILLIONAIRES

IN her tumble-down laboratory near Paris, a young Polish woman sought the answer to some of the riddles of the universe. One day she discovered a new substance. She worked over large amounts of "pitch-blende," a rare mineral, and produced a very small amount of it. It glowed in the dark, so she called it "radium."

Scientists were amazed at the violence with which radium shot forth powerful rays. These rays have been found to help conquer a human scourge—cancer.

The young woman was Mme. Curie, who comes to America to receive recognition for important scientific work.

Mme. Curie is to receive something more valuable to her than honors from America. Although the first "manufacturer" of radium, she owns none. She gave it all to suffering humanity. When asked what she wanted above all things, she replied: "A gram of radium, all my own." So American women are collecting $100,000 to buy Mme. Curie the desired 15 grains.

Where other girls played with dolls, Mme. Curie played with test tubes as a child. She was born in Warsaw, Poland, in 1867. Her father was a professor of physics; her mother the head of a girls' school. The little girl kept the laboratory clean and made experiments of her own.

Poland was torn with political troubles. The girl chemist's father died. There seemed no future. So Marie Sklodowska went to Paris to continue her work. She had twenty dollars a month, the income from a Swiss prize. She slept in an attic and lived on black bread and milk. At school she cleaned laboratory glassware to help earn her living.

At the Sorbonne, the great French university, a young physicist was looking for a laboratory assistant. He hired the Polish student. They worked and studied together. In 1895 they were married. They took a home outside of Paris and rode in daily on bicycles to save carfare. Mme. Curie taught in a school by day and experimented in the laboratory at night.

In 1898 the Curies sent to the Academy of Sciences the modest announcement that they had discovered a new substance that showed marked radioactivity. It was radium. Honors, fame, fortune, Nobel prizes followed. The couple continued their joint studies until M. Curie was run down and killed in 1906. The Sorbonne could find no one to give his lectures, so, sweeping aside its ancient rule, installed Mme. Curie as professor.

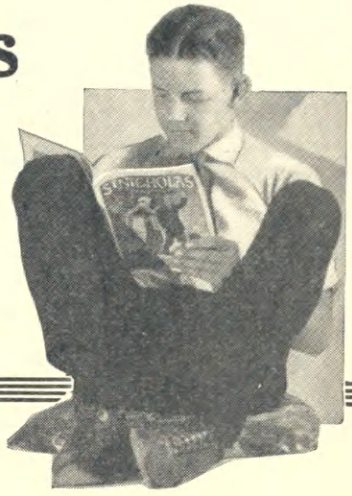
Mme. Curie divided her life into two parts.

At the Sorbonne, she was one of the outstanding figures of the world of science; behind the high walls of her home she was a simple mother. She avoided honors.

The war broke out. Mme. Curie gave up her life work. With her daughter, Irene, and a few students, she went to a hospital beyond the lines. Her great knowledge of X-rays made her particularly valuable. She designed the first portable X-ray apparatus that was sent to the front. The French Government estimates that she saved 50,000 lives.

The Early 'Teens

The Critical Period in the Life of Your Boy or Girl



THE influences of these years make or mar character. Associations, pastimes, sources of information—all are vital, but perhaps the greatest of formative factors is good reading.

No one expects a healthy, normal boy or girl to avidly absorb Walter Pater's "Epicurean" or the works of Henry James. It is only natural for youth to turn to that which is red-blooded, exciting. Lacking other means to satisfy this inherent desire, it almost invariably follows that youth will obtain it in the type of reading you have reason to fear—the highly-colored, sensational literature always so easily acquired.

Every parent must meet this problem—the problem of charging helpful character-building influences with the fire of real interest. The solution of this problem is the function of

ST. NICHOLAS MAGAZINE

In it, boys and girls find the things they want to know—and should know—more about. Things that affect their lives, and make for true development. The intensely interesting high-lights of history; strength-building outdoor sports and games; the marvels of nature and science; short stories and serials; facts about great men; tales of other lands; prizes for writing, drawing, photography, and puzzles—all that appeals to boys and girls, from eight to eighteen, has its place in ST. NICHOLAS.

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??? WHO: WHAT: WHEN: WHY ???

****On this page we print such questions and answers selected from our daily mail as seem to have a general interest.*

Question. From what source do we get the oft-quoted line: "Stand not upon the order of thy going"? Is it in the Bible?

Answer. This line is not in the Bible, but in Shakespeare. You will find it in the banquet scene in Macbeth. Crazed by the ghosts that haunt the feast, Macbeth makes a scene that throws his guests into a panic of confusion. Lady Macbeth dismisses them with the words: "Stand not upon the order of your going, but go at once." It is often a matter of doubt whether a quotation be Biblical or Shakespearian in origin.

Question. What is a sonnet?

Answer. A sonnet is a poem of fourteen lines, each having eight or ten syllables, properly expressing two successive phases of a single thought or sentiment—in other words, a double poem: "a picture and a reflection, a song and an echo." A sonnet was primitively a lyric sung with musical accompaniment. It is generally claimed that the sonnet originated in Sicily. It was widely cultivated in Italy during the thirteenth century, and reached its highest art in Petrarch, who was known as the "Father of the Sonnet." Shakespeare's and Wordsworth's sonnets are fine examples of that form of composition in English literature. An exquisite sonnet is "On first looking into Chapman's Homer," by John Keats. Longfellow is our most famous American sonneteer.

Question. In your article on John McCormack and the Irish Ballad, why do you make no mention of "Mother Machree," which is the most popular encore song in Mr. McCormack's repertoire?

Answer. "Mother Machree" is not a native song of Ireland. While it is Irish in melody and sentiment, the words were composed by Rida Johnson Young, an American-born writer of fiction and plays. The music was written by Ernest Ball, an American composer of popular sentimental songs. The vogue of "Mother Machree" is chiefly in this country. It was first sung in San Francisco, several years ago.

Question. What is the Aurora Borealis?

Answer. We knew that we would be asked this question sooner or later—for the world has been asking it from the beginning of time. There is no actual knowledge as to the cause and character of the Aurora—or Northern Lights, as it is sometimes called. A standard authority tells us that the irregular patches of dancing columns of light are due to electrical activity, and that "the frequency of the Aurora is supposed to be variable, over a period of about eleven years, corresponding almost exactly with that of the frequency of sun spots. For this reason, among others, it is supposed that some connection exists between the Aurora and the Sun Spots. If you turn to the standard encyclopedias you will find a lengthy description of various Auroral phenomena, but you will not get any nearer to the actual truth concerning the origin or character of the Aurora. It has baffled science for years and it has been the favorite subject of eccentric philosophers who have put forth fantastic theories about it. According to the old college story, there appears to have been one young man who *did* know what the Aurora was. He came to his astronomy class totally unprepared, and when the professor, calling on him suddenly, asked him, "What is the Aurora?" the student hesitated and answered: "I did know, but I forget." The professor raised his eyes pathetically. "What a tragic loss to science!" he exclaimed. "Here is the only man in the history of the world that has ever known what the Aurora is—and he has forgotten."

Question. Please explain the split infinitive and give examples to be avoided.

Answer. The English infinitive consists of the preposition "to" and the verb. "To regain," "to be regained," "to have regained," are all forms of the infinitive. When you place an adverb between the "to" and the other half of the infinitive you split the infinitive. "He thought he knew a way *to easily regain* the ground" is a perfect example of splitting the infinitive. "He thought he knew a way easily to regain the ground" or, "He thought he knew a way to regain the ground easily" is the way to avoid splitting the infinitive. "To be easily regained," "to have easily regained" are other examples of splitting the infinitive. It is just as ungraceful to split participles, as, "He had a gift *for successfully making* his point."

Question. Who is the author of the quotation, "If a man write a better book, preach a better sermon, or make a better mouse-trap than his neighbor, though he build his house in the woods, the world will make a beaten path to his door"?

Answer. The "mousetrap quotation" has provoked a lively controversy, lasting for a number of years. Emerson did not write it, but it was attributed to him by an author who once heard Emerson give expression to the sentiment in one of his lectures. In one of Emerson's published works we find this paragraph, "If a man has good corn, or wood, or boards, or pigs to sell, or can make better chairs or knives, crucibles, or church organs, than anybody else, you will find a broad, hard-beaten road to his house, though it be in the woods. And if a man knows the law, people will find it out, though he lives in a pine shanty, and resort to him. And if a man can pipe or sing, so as to wrap the prisoned soul in an elysium: or can paint landscape, and convey into oils and ochers all the enchantments of spring or autumn; or can liberate or intoxicate all people who hear him with delicious songs and verses, 'tis certain that the secret can not be kept: the first witness tells it to a second, and men go by fives and tens and fifties to his door."

The familiar quotation beginning, "If a man write a better book," has been credited erroneously to Thoreau, Elbert Hubbard, and a number of other American writers.

"I put it off—*just put it off*"

Merely changing the names to protect his pride, let us tell his story in his own words.

He had written to the Institute asking for information about the Modern Business Course and Service; and our representative found him in his "office"—a box-like structure eight feet square attached to a ramshackle building which was the "works."

"ALEXANDER Hamilton Institute" he exclaimed with a pathetic smile, "Will it be any use I wonder, now that the funeral is over?"

He paused a moment and then went on—

"Six years ago I clipped a coupon to send to the Institute, but—I didn't send it. I put it off . . . just put it off. I was thirty-nine then, with a flourishing business—and considerable property besides. Now I am forty-five and all I own is the tools out there in the shop. . . . . Last week I sent in a coupon—six years late. . . . .

"You know where the Emerson Store was, don't you?" he asked. "Well, I'm it. I'm the bankrupt."

"Lack of experience?" the Institute man ventured.

"On the contrary I've had a pretty broad experience. I've made money as a retailer, as a salesman and a jobber. And I know the heating and sheet-metal business as well as any man in this country—

"But I didn't know enough

"The National Homes Company built a hundred homes here during the War. I got the contract for the heating and roofing work. It was my big opportunity. But I'd never been thoroly grounded in the fundamentals of business; I didn't understand all the underlying currents that can carry a man forward or hurl him on the rocks.

"Rising material and labor costs got me. . . . The business and $18.000 is gone. . . . And so you see me here today . . . with one man, and my tools—all that is left after twenty years' work. At home it's pretty tough."

He stopped and lighted his pipe, then his slightly stooped shoulders straightened.

"But it's not too late to begin again," he declared. "And this time I'm going to start right. That's why I sent in the coupon and asked you to call. . . . But what a world of difference it would have made to me," he concluded, "if I had acted on my impulse six years ago, instead of putting it off!"

Opportunity can either make or destroy

Some day, you say to yourself, your opportunity will come. And it will. It comes sooner or later to almost every man, giving him the chance to do bigger things and make larger profits than ever before.

Some men are ready. They seize their chances and establish themselves for life. Countless other men also seize their chances—men who know enough to handle smaller things but lack absolute knowledge of one or more vital departments of business. So the opportunities that should lift them overwhelm and destroy them instead.

We save years of men's lives

The Alexander Hamilton Institute was established to teach business as a profession, as law schools teach law or medical schools teach medicine.

With the help of leaders in the various departments of business—sales, accounting, factory and office management, costs, merchandising, advertising, transportation, corporation finance—its Course was prepared.

The Institute has had the privilege of helping thousands of men to reach a higher place at a younger age; to save the years that most men lose in dull routine, or in energy misapplied.

You may put it off but—

The institute *urges* no man to accept its training; it wants no man who needs to be urged to consult his own best interests It seeks only the opportunity to lay the full facts of its Modern Business Course and Service before you, leaving you to decide. The facts are contained in a 116-page book entitled "Forging Ahead in Business." It was this book that the man whose story is told above *meant* to send for six years ago. It will be sent without obligation.

Alexander Hamilton Institute

220 Astor Place **New York City**

Send me "Forging Ahead in Business" which I may keep without obligation.

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Canadian address, C.P.R. Bldg, Toronto; Australian address, 8a Castlereagh St., Sydney

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THE OPEN LETTER

We are giving, in this number of The Mentor, one of a very few articles written by Dr. Rabindranath Tagore during his present visit to America. Dr. Tagore not only writes an article for us, and gives us a poem, but finds The Mentor so interesting that he sends it, with all the back numbers from the beginning, to his model school at Bolpur, India. It is a most gratifying evidence of the worth of The Mentor's simple and direct message of information.

★ ★ ★

The most complete evidence of this is the "cloud of witnesses" that we find in our daily mail. The man of affairs in the large city tells us that The Mentor is "the most profitable companion he knows for a leisure half-hour"; a shut-in invalid woman tells us that she finds it "a genuine boon"; a rancher writes of a cowboy who rides miles to get his Mentor; a high-school girl tells us that it helps her in her class work; a father tells us that it "means everything in the way of enjoyment and instruction for his children"; a farmer writes that it "makes lonesome hours worth while"; a doctor tells us that it is read eagerly by the patients in his hospital, and, after that, by "the nurses sitting under the night lamps in the corridors"; a clergyman in Georgia writes that The Mentor is "as indispensable to him as bread"; and a friend, who does not give his address so that we can thank him, voices the pleasant assurance that he is "completely sold on The Mentor and means always to take it."

★ ★ ★

Among the letters I pick out this, from a young woman reader: "How can one get cultivated? I read the latest books, and I go to lectures in my town, and keep up with the work of my social club. Sometimes I feel that I am not getting anywhere. What is cultivation?" That appeal comes, I know, from "Main Street," Gopher Prairie, and I have been expecting it. Thousands of earnest folks are asking the same question—meantime reading the best they can find, and eagerly brushing up on all sorts of subjects in order to attain "cultivation." And the answer is so simple. Cultivation does not come by reading books alone—no, nor by simply talking about books. Cultivation means more than the mere getting of information. The habit of acquiring knowledge is most important, but it does not, in itself, cultivate one. A man may know a lot, and be worth very little to himself or to his fellow men. There is such a thing as acquiring more knowledge than one's intelligence can stand. It is not simply a matter of gathering knowledge; it is the spirit in which knowledge is gathered that counts. Cultivation implies not only an eager searching for truth, but a love of truth, and a desire to be true to one's self and others.

★ ★ ★

Take it easy then. Don't try too hard. Cultivation lies in yourself. You do not have to go far to find it. Read and observe the facts of life in a spirit of broad, sympathetic human interest. Learn to live and live to learn—above all, make it your interest to understand and enjoy all that is fine and beautiful in this wonderful world of ours, and impart some of your interest in it and knowledge of it to others. Cultivation is the fine flowering of civilization—and wherever life is simplest, sincerest, cleanest, kindest, and most aspiring in human service—*there* is the highest civilization.

W. D. Moffat

EDITOR

HENRY FORD THOMAS A. EDISON JOHN BURROUGHS

THREE FAMOUS NATURE LOVERS

THE TIE THAT BINDS

THESE men were brought together by their common interest in the birds, wild flowers and the growing things. Their annual camping trip was famous all over this country; it was an event in each of their lives. While John Burroughs lived, he probably got more genuine enjoyment out of life than any other ten men. He loved the great outdoors because he knew Nature's secrets, and his keenest pleasure was seeking for Nature's new wonders. Henry Ford recently said, "I believe that if you had offered John Burroughs a million dollars in one hand and the sight of a new bird in another, he would have chosen a sight of the new bird. The very last time he was at my farm he saw a winter bird from the North that he never had seen before, and the discovery filled him with animated interest for days."

As far as human nature is concerned you are no different than John Burroughs, for everyone that is worth while loves the birds and wild flowers. Instinctively *you* have a desire to know more about the growing things as he had and you can add new interest and new joys to your life as well.

BIRDS
By Neltje Blanchan
Describes
124 Different Birds
48 Full Page Color Plates
300 Pages

TREES
By Julia Rogers
Describes
63 Different Trees
16 Full Page Color Plates
32 in Black and White
300 Pages

Butterflies
By C. M. Weed
Describes
109 Butterflies
32 Full Page Color Plates
16 in Black and White
300 Pages

Wild Flowers
By Neltje Blanchan
Color Key
169 Different Wild Flowers
48 Full Page Color Plates
300 Pages

The Little Nature Library

The Little Nature Library covers the most interesting subjects of the great outdoors—the Birds—the Trees—the Butterflies and the Wild Flowers—written by recognized authorities—beautifully illustrated with 144 full page color plates besides 48 in black and white—covering 465 different species—written as an interesting story so simply told that a child can understand. The description of each species makes quick identification possible.

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THE GREATEST POWER IN THE LAND

Ewing Galloway Photo

A MODERN NEWSPAPER PLANT

" The press is the greatest private power in the world today, in fact the mightiest public power for that matter. Through its eyes and ears we see and hear the activities and declarations of the world, of the federal, state and city governments, of our public men and fellow citizens. A country's dependence upon the faith of the press is profound, for we know only what it tells us."

—GEORGE CREEL

OLD "NEWSPAPER ROW" NEW YORK CITY—ABOUT 20 YEARS AGO

Park Row was for years, the home of New York journalism. The tall structure at the left is the *World* building. The little old building next housed the *Sun*. Next is the *Tribune* building; then the handsome building that was the home of the *Times* for years. In the last building at the right the *Press* was published, and the *Journal*, afterwards the *American*. The old *Herald* building was a block below

JUN 9 1921

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GUY P. JONES, Managing Editor

RUTH W. THOMPSON, Assistant Editor

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THE PRESS

THE GREATEST POWER IN THE LAND

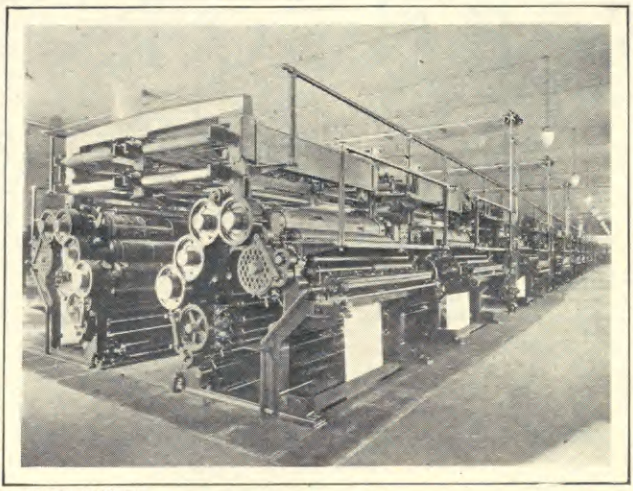
By GEORGE CREEL

IN 1850 the aggregate circulation of the fifteen dailies published in the City of New York was less than 130,000, and the printing of 18,000 eight-page papers in an hour was justly regarded as a mechanical achievement worthy of extended comment. Today it is a second rate metropolitan daily that does not have its circulation well up into the hundreds of thousands, and in the basement of the average plant are great presses able to turn out close to four hundred thousand sixteen-page papers in an hour.

The newspaper has become one of the great American industries in point of millions invested and thousands employed. Its true importance, however, cannot be reckoned in terms of dollars and cents, for the newspaper does not traffic in materials, but trades entirely in that elusive commodity known as Public Opinion.

The day of the "personal editor" has passed—Henry Watterson was the last of the famous line of Greeley, Raymond, Webb, Dana, Pulitzer and Nelson—but the influence of the press is far mightier at the present than when the giants of the old journalism made every campaign a personal battle, leading hosts in person.

It is the influence that the *monopoly* of any one thing is always bound to wield. And in the matter of intelligence—the collection and dissemination of news—the press has an iron-bound monopoly. Neither the government nor the states nor any of our cities, save a radical few, have dared to experiment with an official newspaper of any sort, for while the favoring arguments are many, the dangers outweigh the advantages.



Ewing Galloway Photo

THE PRESS OF TODAY

This battery of 24 units turns out 432,000 16-page newspapers in an hour. White paper is fed to the units from rolls under the floor

SECRET OF POWER

When a mayor speaks, therefore, or a governor, or even a president, his words are not heard beyond the sound of his voice unless the press comes to his aid. Were it not for the correspondents sitting in the galleries of the Senate and the House, not only would the people remain in ignorance of the activities of Congress, but in all likelihood they would not know that the august body was in session.

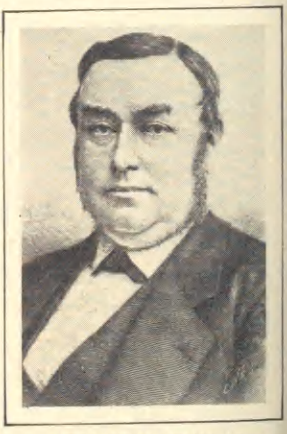
In equal degree the press is our one medium of contact with the outside world. What would we know of Europe, South America and the Orient but for the cabled reports that reach us through the medium of the morning and evening papers? Only what letters might convey, the lectures of returned travelers or articles in the magazines.

It is easy to see, therefore, that the press is the greatest private power in the world today, in fact, the mightiest public power for that matter. A country's dependence upon the faith of the press is profound, for we know only what it tells us.

PRESS ITS OWN CENSOR

The American press kept this faith during the Great War. From beginning to end there was no press-censorship law in the United States. The newspapers at all times were their own and only censor. The desires of the Government with respect to the concealment of military plans, policies and movements, were set forth in certain specific requests. No statutory enactment stood behind them. Their observance rested entirely upon the patriotism of the individual editors.

Our European comrades-in-arms viewed the experiment with amazement, not unmixed with anxiety. In every other belligerent country censorship laws established iron rules, rigid suppressions and drastic prohibitions carrying severe penalties. Yet the American ideal worked! There were violations, as a matter of course, and papers holding to the unwritten agreement suffered injury from papers less careful and less honest; but with very few exceptions the press of the United States kept the faith.



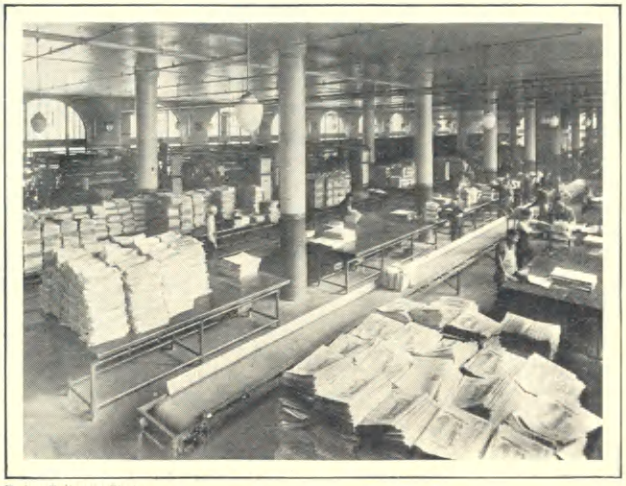
GEORGE W. CHILDS

Founder of the Philadelphia *Public Ledger*

THE WEAKEST POINT

The weak point in the case of the press is the persistence of the "party organ," the truly amazing tradition that puts so many papers into what is nothing more than spiritual bondage. This operates inevitably against the educational value of the press.

Automatic support contributes as little to intelligent discussion as automatic attack. Just as Democratic papers feel constrained to "point with pride" so are Republican papers constrained to "view with alarm." As a consequence few issues are presented as a whole, fairly and interpretatively, but one side is put forward in flat antagonism to the other, compelling the reader to make a choice between two distorted representations. Great changes are being worked, however, and the power and prosperity of independent journals makes it certain that another decade will witness the disappearance of the "party organ."



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THE TRAFFIC DEPARTMENT

The mail room of a modern newspaper plant. Conveyors carry the papers, counted and piled, to the tables where they are made into bundles for the mails and city distributors

Charles Ritzman Photo

JAMES GORDON BENNETT THE 2ND

Who developed the *Herald* enterprise that his father founded

Coming down to the mechanism of the press, the heart of any paper, when all is said and done, is the telegraphic news. This is furnished for the most part, by three great press associations—the Associated Press, the United Press and the International News Service. The Associated Press is one of the world's most remarkable examples of co-operation, for the member papers own and control. The United Press is a product of the Scripps organization, formed originally to serve the Scripps chain, but broadened until it sells its service today to any paper willing to purchase. The International News Service was organized primarily to serve the Hearst papers, but like the United Press, has widened into a field of general service.

The Associated Press, except in the case of South America, is almost purely domestic in its operations, working internationally through contracts with Reuters and Havas, the respective official press associations of England and France. The United Press and the International News, however, sell abroad as well as at home, and regard the world as their field.

The continued success of these press associations is entirely dependent upon accuracy. In the case of the Associated Press, a mistake is brought instantly before the governing board, and as the membership includes dailies of every political faith, even a suspicion of political bias is made the subject of unsparing investigation. As for the United Press and the International News Service, inaccuracy or partisanship means loss of clients, a commercial check that works automatically.

These three press associations supply the major portion of the newspapers of the United States with all the telegraphic news. Almost every important daily, however, maintains its Washington correspondent and the great metropolitan newspapers evidence a growing tendency to build an independent machinery of their own. Many of the New York, Chicago and Philadelphia newspapers maintain offices in the principal European capitals and their cable tolls alone in the course of a year run from fifty thousand to two hundred and fifty thousand dollars.

THE SUN.

NUMBER 1.] NEW YORK, TUESDAY, SEPTEMBER 3, 1833. [PRICE ONE PENNY.

PUBLISHED DAILY,

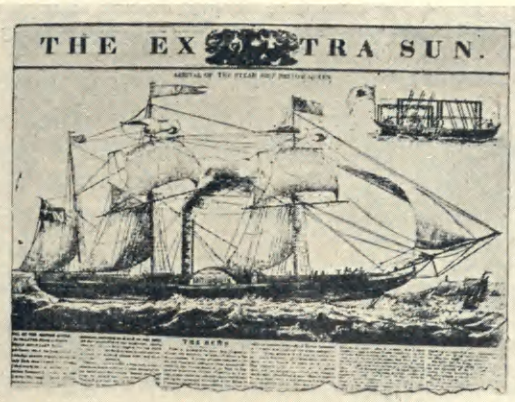
AN IRISH CAPTAIN.

FIRST NUMBER OF THE NEW YORK SUN

THE WORLD ITS FIELD

Important events are always made the subject of special correspondence. When President Wilson went to Paris, a transport was devoted to the exclusive use of the correspondents who accompanied him. Pershing went into Mexico on the punitive expedition with almost as many correspondents as soldiers and when Roosevelt came out of the jungle at the head-waters of the Nile, he was met by a full score of correspondents. Wherever there is war, political ferment, excitement, adventure or the unusual, the special correspondent is sure to be found, eager, active, resourceful and tireless.

In the newspaper office itself, there is an organization almost military in its precision and speed. Contrary to the general theory of "one man power," the central control is usually vested in a council composed of the owner, if the owner happens to be a newspaper man, the managing editor,



AN EARLY "EXTRA"

Published on the arrival of a ship from England. (Lower) *Sun* and *Herald* offices in the pioneer days

the editor-in-chief and at times the city editor, the Sunday editor and some of the editorial writers. This council is the board of strategy, deciding as to policies and positions, attack and defense, going over the happenings of the day and considering the news from all of its angles. Aside from the value of general suggestion, there is the even larger necessity of assuring unity of effort and guarding against cross purposes.

From this council the editor-in-chief returns to his staff, and after holding discussions as to the subjects to be treated, makes his assignments. In the old days it was a common practice for one man to fill the editorial columns, but now these columns are subjected to an intelligent subdivision that gives each writer a chance for study and independent investigation.

HOW NEWS IS GATHERED

Outside of the editorial page, the managing editor is in entire charge of the paper, with the city editor and the telegraph editor as his chief aids. The city editor is in command of the reporterial staff, that body of brisk young men who penetrate into every phase of the city's life and activity. Most of the work is a matter of "runs" that is, the stationing of men at established sources of news, such as the police courts, the police stations, the law courts, the mayor's office, etc. Then there are assignments — the dispatching of men from the office to handle "stories" that call for particular investigation, to interview distinguished arrivals, to follow up a "story," etc.

The evening papers, owing to the necessity for high speed, usually operate under a re-write system; that is, the reporter is merely a "leg man" who telephones in the facts to the office where another man whips them into printable form. The morning papers, however, have more time and it is usually the case that the reporter returns to the office and writes his own story.

When the copy leaves the reporter's hands, it goes to the city editor, who passes upon it generally, then to the copy desk, where it is edited and given head and sub-heads, after which it is passed to the city editor who is the final arbiter, subject to his own decision to refer most matters to the managing editor. The whole process constitutes a fairly efficient check, and this is reinforced by the growing practice of refusing to print a "personal story" until honest effort has been made to get the statement of the "other party." However, the emphasis upon speed makes this effort more of a promise than a performance.

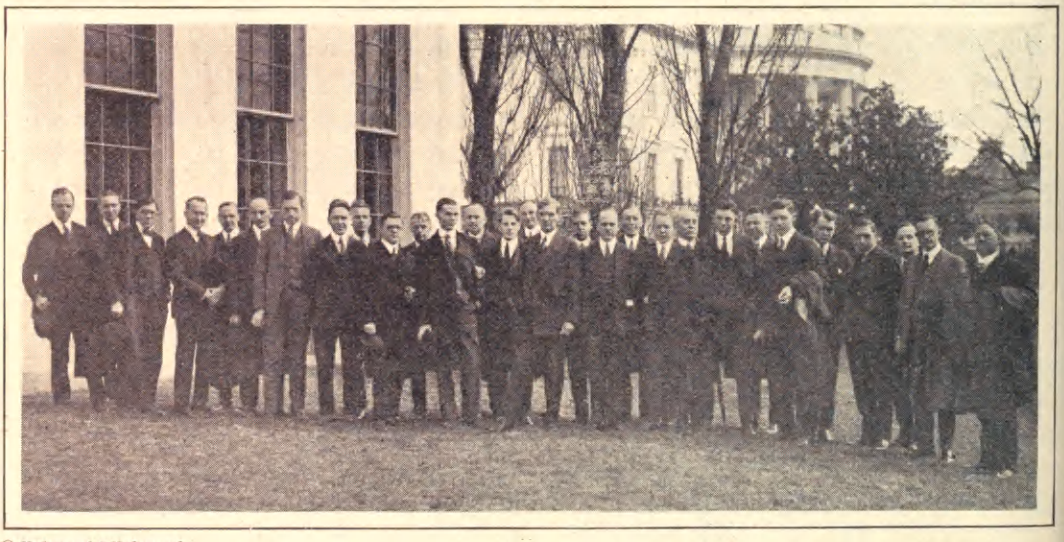
BEN DAY

Founder of the penny newspaper and inventor of printing processes

THOUSANDS OF DOLLARS SPENT

The telegraph editor in the modern daily is in direct touch with his wires. Into his hands, direct from the telegraph instrument itself, comes the news of the country and the world, and from this mass it is his business to select the vital and exclude the unimportant. Thousands of dollars in cable tolls are thrown into the waste basket every day, what with rejections of the whole or unsparing "cuts."

Before a paper is "put to bed," another council determines "make up." This is usually composed of the managing editor, the city editor and the head of the copy desk, and it decides as to the relative importance of news—what "stories" shall go on the first page, the second page, the third page, etc. These decisions are of the highest importance, for the front page, particularly, is the show



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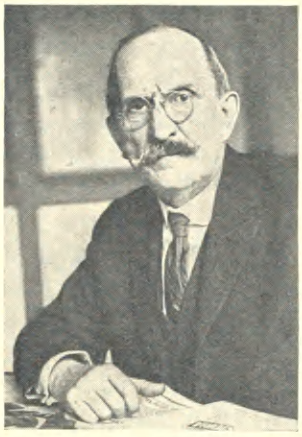
THE EYES AND EARS OF THE PUBLIC; NEWSPAPER CORRESPONDENTS AT THE WHITE HOUSE

window of the newspaper store.

Fixed departments, like sport, society, music, art and the drama, are somewhat exempt from the iron routine of the office, although subject, in the majority of cases, either to the supervision of the city editor or the managing editor. These departments are generally handled by specialists who "sign their stuff," or as they are somewhat rudely called by the reporters—"sacred cows."



FREMONT OLDER

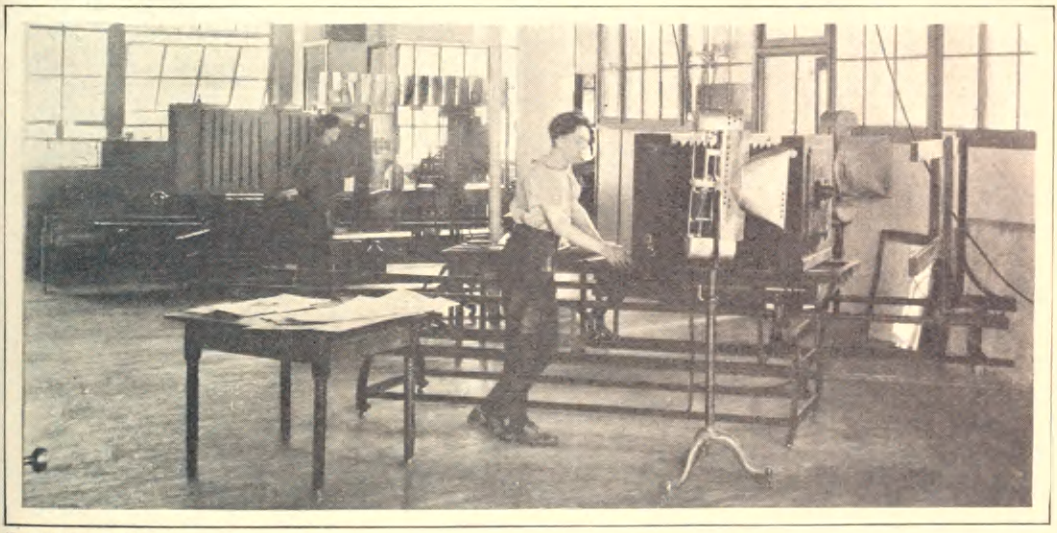
An editor who cleaned up a city. The San Francisco graft prosecution, which shook the city to its foundations, was the result of Older's long newspaper campaign for civic decency

It is when one comes to the Sunday paper that the tremendous sweep of the modern daily becomes so very evident. Twenty-five years ago news had a very narrow definition, but today it takes in every field of human interest.

The old-time newspaper held closely to a restricted province, Greeley going so far as to exclude dramatic criticism from his idea of news. There were few illustrations and few adventures into any field other than those of political opinion and actual occurrences of the day. People bought *Puck* and *Judge* and *Truth* when they wanted "comic stuff"; they found their cartoons in periodicals like *Harper's Weekly*, women readers their fashions in the women's magazines; they looked for illustrations in *Leslie's* and other similar magazines; the theatre art had its own voices and so did sport, music, art, literature and society.

COVERS EVERY FIELD

The Sunday paper of today has its book section in which the latest publications are reviewed by the



Ewing Galloway Photo

THE PHOTO ENGRAVING ROOM, ONE OF THE IMPORTANT DEPARTMENTS OF THE MODERN NEWSPAPER

most competent critics; its sporting section, the editor of which thinks nothing of paying thousands of dollars for a signed article from some champion; its society section, its costly "comic supplement," its very beautiful rotogravure section and its highly specialized treatment of music and the allied arts, the whole a tremendous volume without its parallel since Caxton.

This very size is its weakness, but it is a weakness that is being cured by natural remedies. The increasing cost of paper due to shortages in supply, is forcing reduction, not only in size but in the number of "extras." Aside from this, competition is proceeding along saner lines, with larger emphasis being placed upon quality rather than mere quantity.

Crowded subway trains and street cars are having their effect upon the size of the American newspaper. Readers are unable to handle large sheets conveniently. Economy of time is made imperative by living conditions in the large cities and newspaper men are finding out that the short article is the one most read by busy people. As a result some of the largest newspapers are condensing their contents to the least possible compass and there is one paper, at least, that has trimmed its pages to accord with the restrictions of rapid transit.

There is, too, a growing understanding of their responsibility in the part of owners—a responsibility bred by the patent fact that the press, while private in its ownership, is, nevertheless, a public utility in every sense of the word.

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COMPOSING ROOM OF PRESIDENT HARDING'S "MARION STAR," A TYPICAL TOWN PAPER

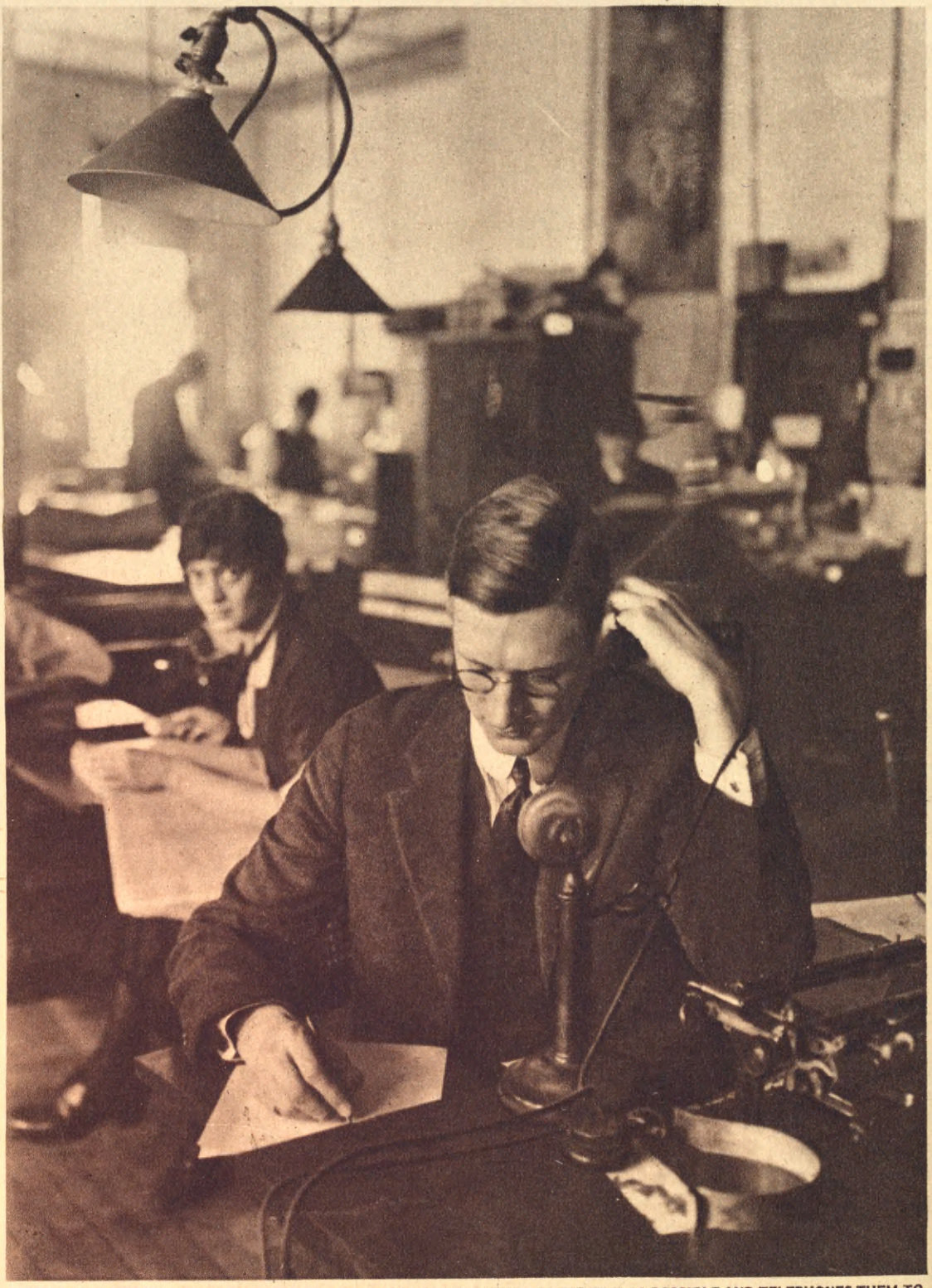
HOW NEWS GETS INTO PRINT
TOLD BY THE CAMERA MAN

THE STORY OF THE NEWSPAPER "STORY," AS A REPORT OF A NEWS EVENT IS KNOWN TO NEWSPAPER MEN, FROM THE MOMENT IT "BREAKS," I. E., COMES TO THE ATTENTION OF THE NEWSPAPER, UNTIL IT IS READ BY THE BUYER OF THE PAPER. . . . . FIRE BREAKS OUT! ALARM BELLS RING IN FIRE AND POLICE STATIONS. FIRE FIGHTING APPARATUS IS RUSHED TO THE SCENE

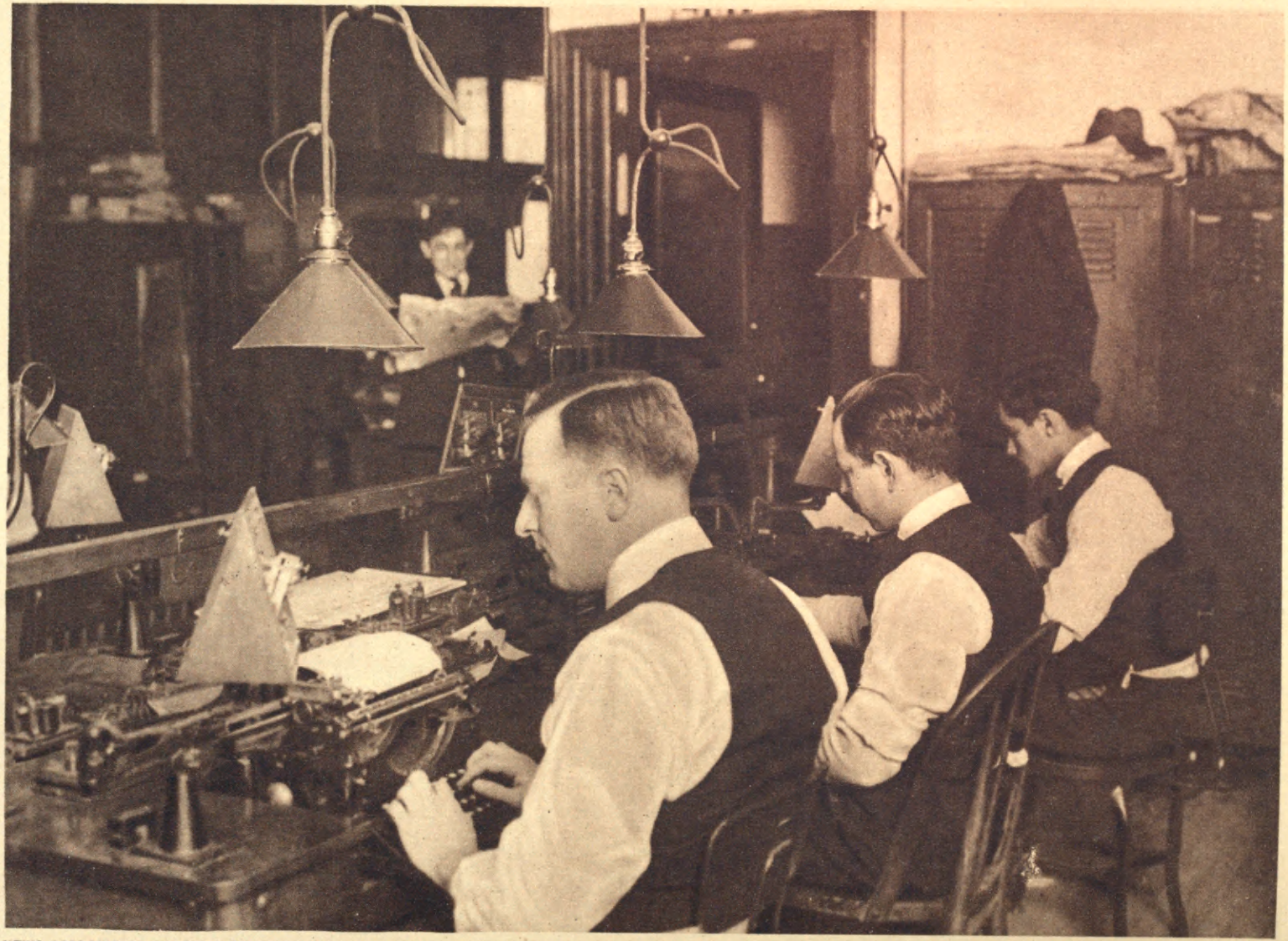
(THIS SET OF PICTURES WAS MADE ESPECIALLY FOR THE MENTOR IN THE OFFICES OF THE BIGGEST NEW YORK NEWSPAPERS)

THE NEWSPAPER REPORTER, ON DUTY AT THE DISTRICT POLICE STATION, HEARS OF THE FIRE FROM THE MAN THAT KEEPS THE POLICE BLOTTER, A STATION JOURNAL IN WHICH ARE ENTERED REPORTS OF POLICE ACTIVITIES. HE "TIPS HIS OFFICE TO THE STORY," THAT IS, REPORTS THE NEWS TO THE CITY EDITOR, AND REMAINS AT HIS POST TO AWAIT OTHER NEWS

THE CITY EDITOR, WHO HAS CHARGE OF THE COLLECTION OF LOCAL NEWS, ASSIGNS A REPORTER FROM THE OFFICE TO "COVER" THE FIRE. IF IT IS A MORNING NEWSPAPER, THE MAN HAS TIME TO RETURN AND WRITE HIS REPORT OF THE EVENT, BUT AN AFTERNOON PAPER MUST WORK FASTER THAN THAT SO A "LEG MAN" IS SENT



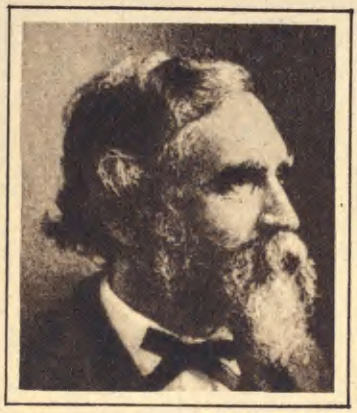
AT THE SCENE OF THE FIRE THE LEG MAN GETS HIS FACTS TOGETHER AS RAPIDLY AS POSSIBLE AND TELEPHONES THEM TO A "REWRITE MAN" IN THE NEWSPAPER OFFICE, WHOSE JOB IT IS TO WHIP INTO READABLE SHAPE THE FACTS GIVEN HIM



NEWS ASSOCIATIONS SUPPLY OTHER THAN LOCAL NEWS. IT IS COPIED FROM TELEGRAPH INSTRUMENTS BY OPERATORS IN THE NEWSPAPER OFFICES AND EDITED BY A TELEGRAPH EDITOR

THE "COPY DESK" IS THE NEXT TO HANDLE THE STORY OF THE FIRE. HERE THE REWRITE MAN'S "COPY," AS IT IS CALLED, IS EDITED FOR THE PRINTER AND A HEADING GIVEN IT

THEN THE LINOTYPE OPERATOR PUTS THE COPY INTO TYPE. ANOTHER OPERATOR SETS THE HEADING. THESE AR
PROPERLY ASSEMBLED BY ANOTHER PRINTER AND DELIVERED TO THE "MAKE-UP" MAN



PIONEERS OF THE

SAMUEL BOWLES: A New England Editorial Conscience

THE "Springfield Republican," was founded in 1824 by the first Samuel Bowles, carried on by the second and great Samuel Bowles, and turned over to the third Samuel Bowles. The second Samuel Bowles, born at Springfield, Mass., in 1826, inherited the New England conscience, and applied it in the direction of his paper, which attained nation wide influence through its vigorous and consistent denunciation of corrupt leaders and their connection with politics. Once, when Bowles visited New York, 'Jim" Fisk, whose activities the "Republican" had frequently assailed, had the editor arrested and locked up in Ludlow Street Jail, a proceeding which served only to awaken the public to a sense of the debt owed to Bowles.

HORACE GREELEY: The Oracle of the Fireside

THERE is a saying that up-state farmers are still voting for Horace Greeley. If they do not actually vote for him they quote his opinions as vehemently as if he were still a living figure in the "Tribune" office, stirring a nation by editorials dashed off in his atrociously illegible handwriting. Greeley, born on a rocky New Hampshire farm in 1811, arrived in New York an awkward, friendless boy with only $10 in his pocket. Forty years later he said: "For forty years I have been trying to get a day off to go a-fishing." That utterance told the story of the unswerving application that made him a power in American journalism, the political personality, after Lincoln, the most revered and hated in the Republic, and, through the Civil War years, the incarnation of the spirit of Abolition.

THURLOW WEED: The "Man Behind the Scenes"

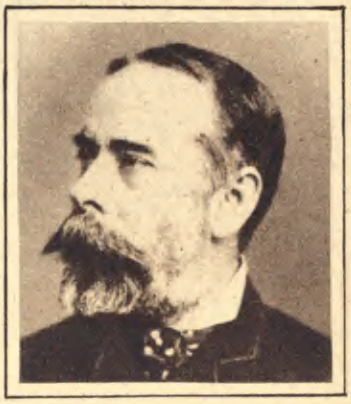
IN the secret heart of Thurlow Weed of the "Albany Journal" there was less love for journalism than lust for power. He was the "Man Behind the Scenes"; the first real political boss of New York State. Like Greeley, he was a product of the old school of American newspaper makers. Born at Cairo, New York, in 1797, he began to make his own living at the age of eight. Then for a dozen years he drifted from town to town, from paper to paper, as a journeyman printer. His work as an editor began with the Rochester "Telegraph," and he launched himself into politics at about the same time. It was in 1830 that he started the "Albany Evening Journal," which he controlled so vigorously for thirty-five years.

JAMES GORDON BENNETT, Sr.: An Editor of Great Enterprises

"ONE man in a cellar against the world." That man was James Gordon Bennett when, in 1835, he founded the "New York Herald." In addition to fighting the world, he did all his own news collecting, wrote the entire paper, kept the books, and made out the bills. Scotch by birth, Bennett came to America in 1819, and flung himself into the journalistic arena in the brave, swashbuckling days when "pestiferous caitiff," and "leprous slanderer" were tempered epithets of editorial exchange. He was one of the greatest news men that this country has ever produced, for the reason that news was the very fiber of his being. He was knocked down, and he made it news; he was horsewhipped, and he made it news; he engaged to marry, and he made that news, too. With him everything public and private meant *news*.

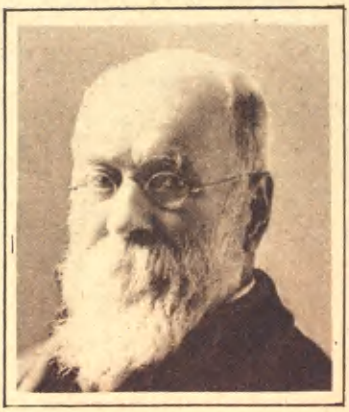
By ARTHU
FORMER EDITO

AMERICAN PRESS



EDWIN LAWRENCE GODKIN: The Spirit of Civic Reform

"WHAT can one expect of New York, with the 'Sun' in the morning making vice attractive, and the 'Post' in the evening making virtue repulsive?" That was a saying of twenty odd years ago when the "Sun" and the "Evening Post" were accepted as reflections of the vigorous personalities of Charles A. Dana and Edwin Lawrence Godkin. Born in Ireland, and educated at Queen's College, Dublin, Godkin came to this country during the Civil War, and in 1865 assumed the editorship of the "Nation" which, sixteen years later, was merged with the "Evening Post." For seventeen years, from 1883, when he succeeded Carl Schurz as editor-in-chief, Godkin was at the head of the "Post" and made it the outstanding organ of reform and the scourge of the political wrong-doer.



CHARLES A. DANA: The Spokesman for Human Interest

DANA brought to newspaper making not only great natural talent, but a ripe and rich scholarship. He was born in New Hampshire in 1819,educated at Harvard, and shared in the historic Brook Farm experiment, there teaching Greek and German in addition to waiting on the table. Joining the "Tribune" staff under Greeley in 1847 as city editor at a salary of $10 a week, he became a power in the paper, leaving it in 1862. In 1868 he obtained control of the "Sun," and through it wrought a revolution in journalistic methods. He once said: "A man at a dinner table who gives you his opinion about everything on earth is a bore. So is a newspaper." That was his editorial creed. The keynote of his school of journalism was "human interest."

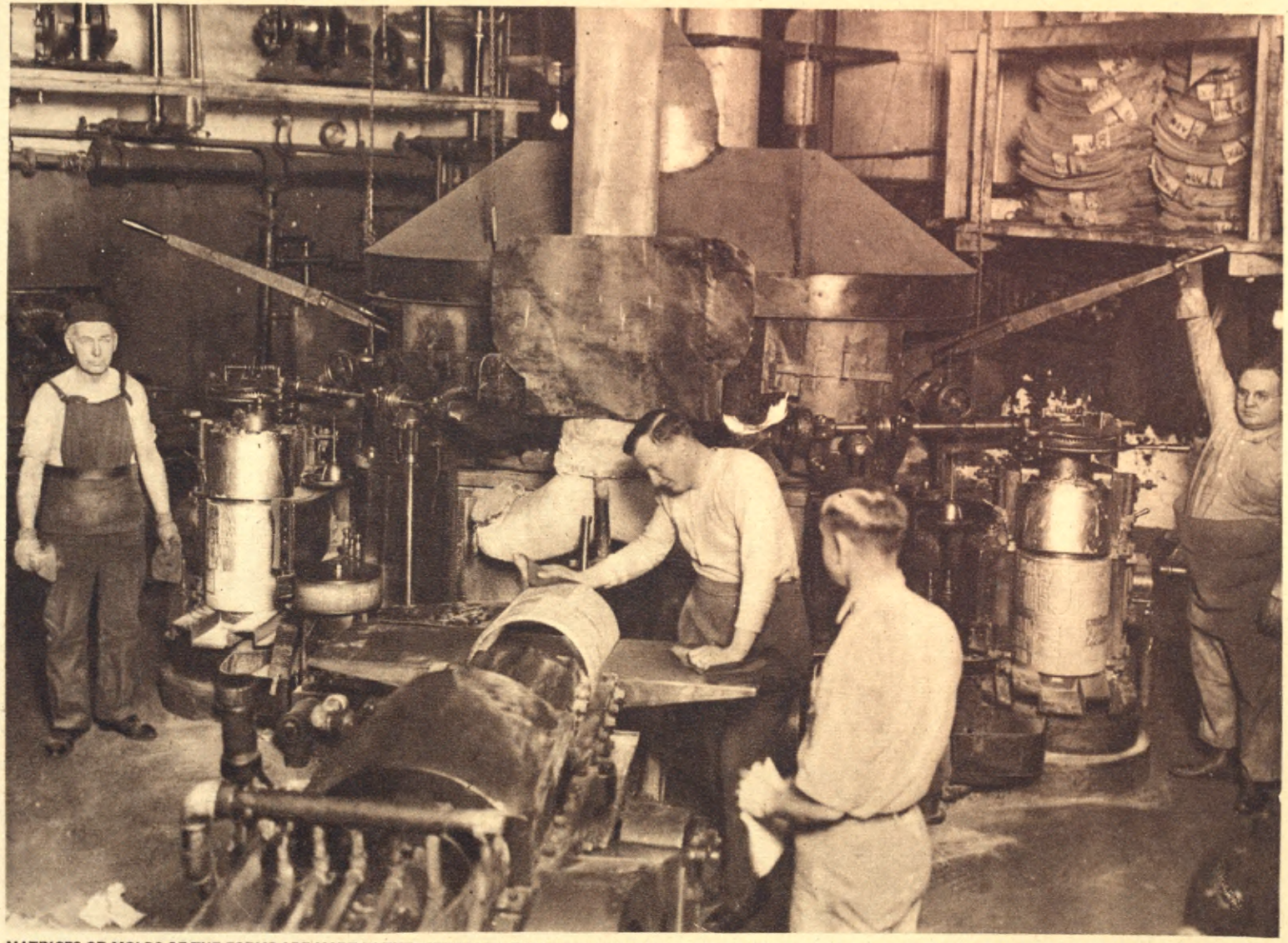
HENRY WATTERSON: A Clarion Voice of the Southland

HE has passed his eightieth birthday, and the years have served only to mellow the kindly feeling that his countrymen, both of the North and of the South, have always had for "Marse Henry." He was born at Washington, D. C., in 1840, and in the Civil War served in the Confederate Army as *aide-de-camp* to Generals Forrest and Polk. Yet intensely Southern as his sympathies have ever been, no man has done more to bridge this chasm between North and South. His connection with the Louisville "Courier-Journal" began in 1868, and in 1872 he was one of the leaders of the liberal movement. Today, Henry Watterson is the last surviving editorial figure linking us with the giants of the sixties.

JOSEPH PULITZER: Founder of a New Journalism

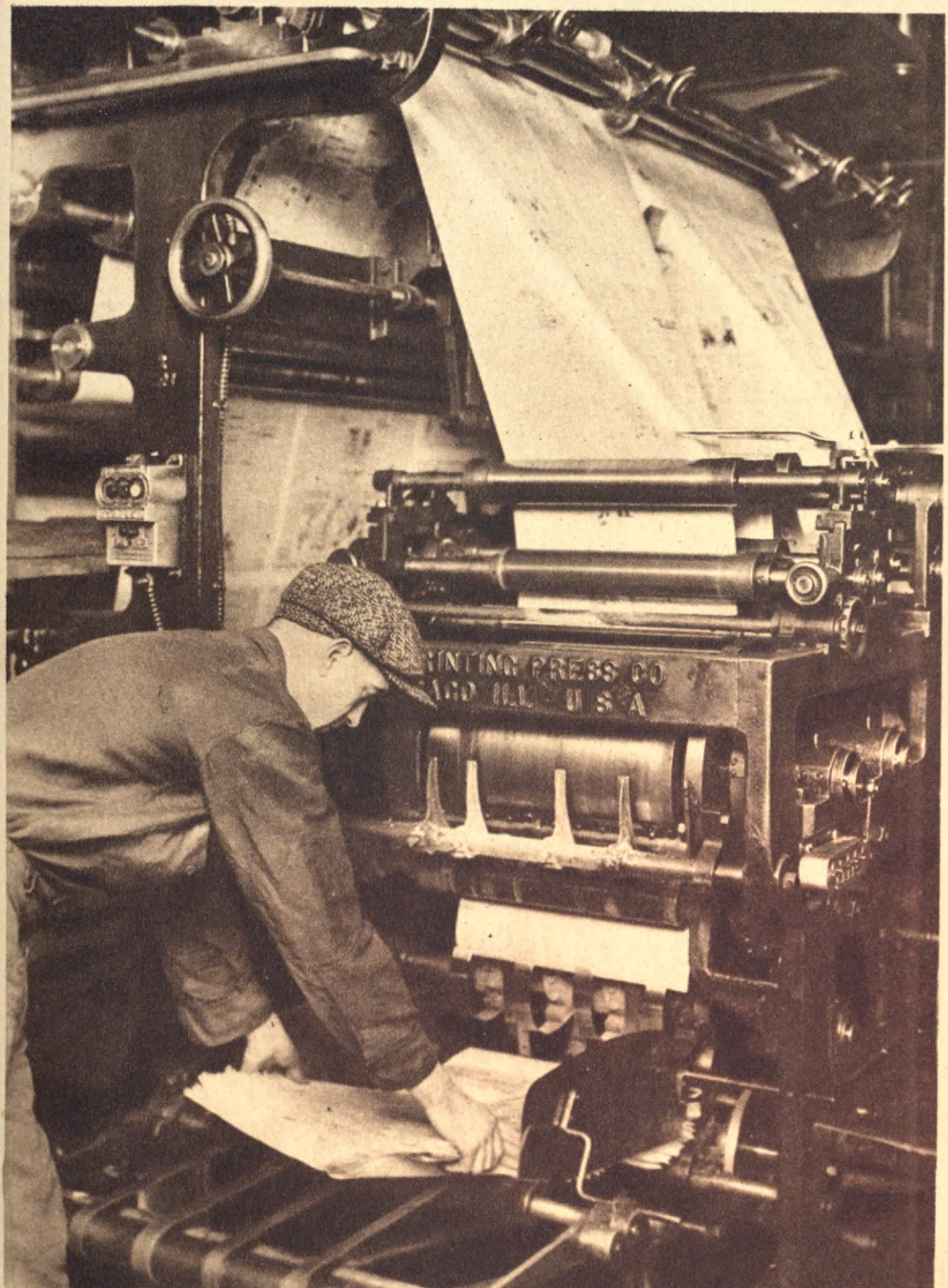
"IF he had not gone blind he would have owned all the money in the world," some one said of Joseph Pulitzer at the time of the great editor's death in 1911. Yet, when half a century before, he landed in this country from his native Hungary, where he was born in 1847, he was a poor boy, unable to speak English. After serving as a soldier in the Union Army in the Civil War, he went to St. Louis, and became a reporter on a German newspaper. He had an encyclopedic mind and an insatiable ambition. While inventing new methods of news gathering, his editorial page remained ever his hobby. When the New York "World," under his direction, was at its zenith of success, he devoted considerable time to travel. But every morning the paper's leading editorials were cabled to him across the seas. He was the real editor.

THE MAKE-UP MAN PUTS THE TYPE INTO "FORMS." FROM EACH FORM A PLATE THAT WILL PRINT ONE PAGE OF THE PAPER IS CAST.



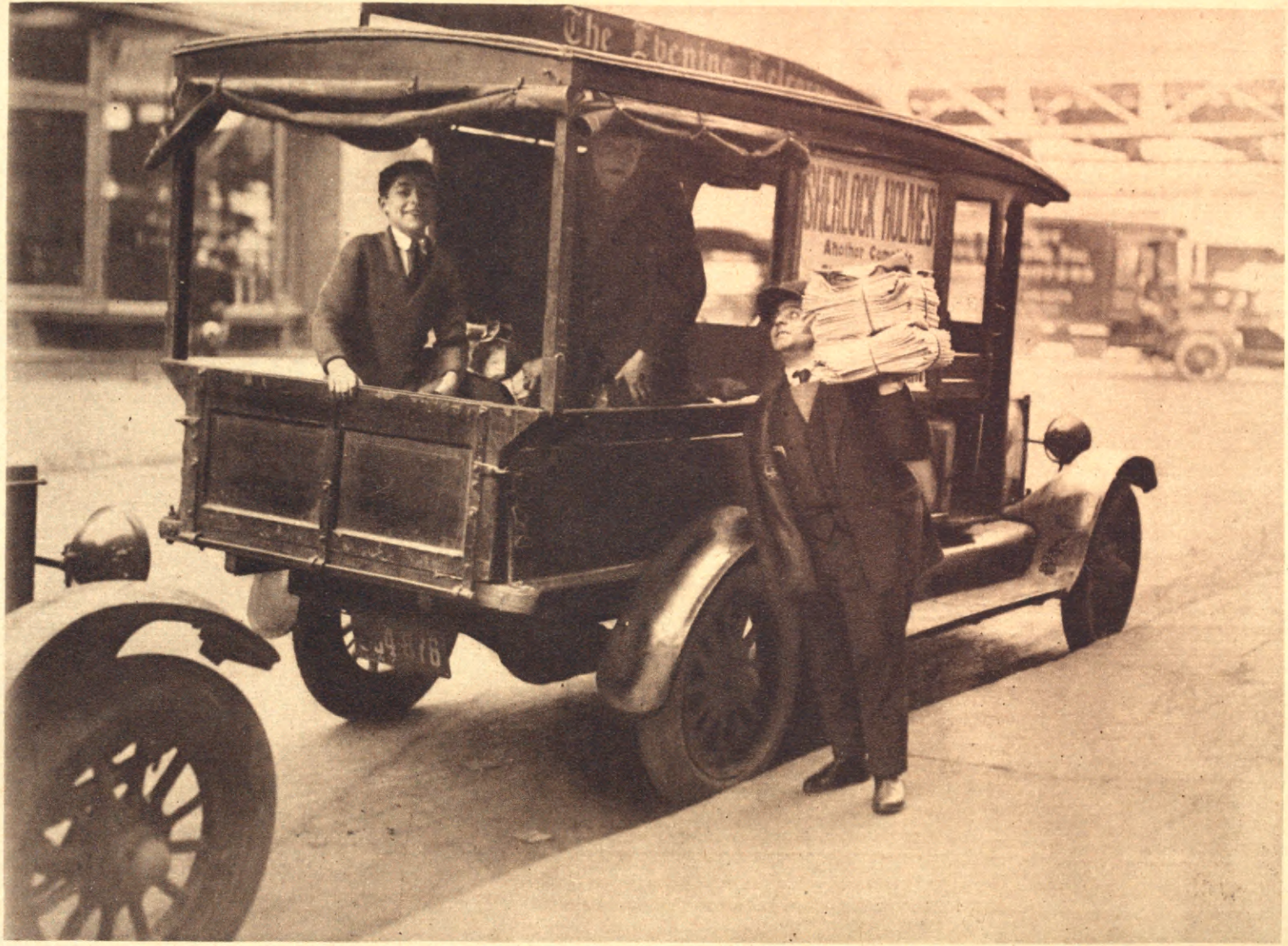
MATRICES OR MOLDS OF THE FORMS ARE MADE IN THE "STEREOTYPE ROOM" AND METAL PLATES CAST FROM THEM. THE CASTING MACHINE CURVES, TRIMS AND OTHERWISE PREPARES THE PLATE FOR THE PRESS

WHITE PAPER WOUND IN ROLLS FEEDS THE MODERN HIGH SPEED NEWSPAPER PRESS AND IS USED IN SUCH QUANTITIES THAT NEWSPAPERS MUST HAVE LARGE STORAGE SPACE AVAILABLE TO ACCOMMODATE A FEW MONTHS' SUPPLY



THE PLATES FROM THE STEREOTYPE ROOM ARE CLAMPED TO THE CYLINDERS, AN ELECTRIC CONTROL BUTTON IS TOUCHED AND PAPERS CUT, FOLDED AND COUNTED, ISSUE AT TREMENDOUS SPEED FROM THE PRESS. A "FLY BOY" REMOVES THEM FROM THE FOLDER

THE MAIL ROOM GETS THE PRINTED PAPERS AND WRAPS THEM FOR DELIVERY TO THE CIRCULATION DEPARTMENT OR TO THE POST OFFICE



AUTOMOBILE TRUCKS CARRY THE PAPERS TO SECONDARY DISTRIBUTION POINTS — NEWSBOYS, NEWSSTANDS AND, IN MOST CITIES, CARRIER BOYS WHO DELIVER THEM TO HOMES

BEFORE THE LAST FLAME IS EXTINGUISHED THE NEWSBOY OFFERS A PAPER CONTAINING THE STORY OF THE FIRE

DANA—MASTER OF FACTS

Charles A. Dana, one of the great group of editors that flourished before and during the Civil War, was a master of facts. The following intimate picture of Dana is given by Chester S. Lord, for many years closely associated with him as managing editor of *The Sun.—Editor.*

THOSE fortunate persons who worked under Charles A. Dana and who knew him well cannot but recall his inspiring leadership, his kindly disposition, his gracious personality, his inborn refinement, his high ideals and his supreme ability as an editor. Dana was educated, scholarly, versatile, and possessed more information than his contemporaries—indeed, few men have ever lived who knew so many facts. Quite as able as the others in political knowledge and as expert in political writing, Dana was additionally learned in literature, in language, in science and philosophy, in art, music and human progress in all its ramifications. He talked in six or seven languages and he read in as many more. He was an authority on Chinese porcelains. He knew by sight and by name almost every tree and shrub and flower that grows in America.

DANA AT WORK

Notable among the contents of his ultra plain office were a stuffed owl, a dictionary and a world map

It was Dana who gave *The Tribune* its reputation for literary excellence. He was its managing editor for ten years just preceding the Civil War and he gathered about him a staff of writers and editors that hitherto had had no equal in American journalism—and they made a great newspaper. He was equally happy in the choice of his assistants when in later years he edited *The Sun.* The staff adored him as their chief, admired his editorial skill, had absolute confidence in his editorial judgment. He mingled with them, encouraged, praised and criticized in a way they recognized as just and helpful. He loved newspaper work and his enthusiasm penetrated the very marrow of his helpers.

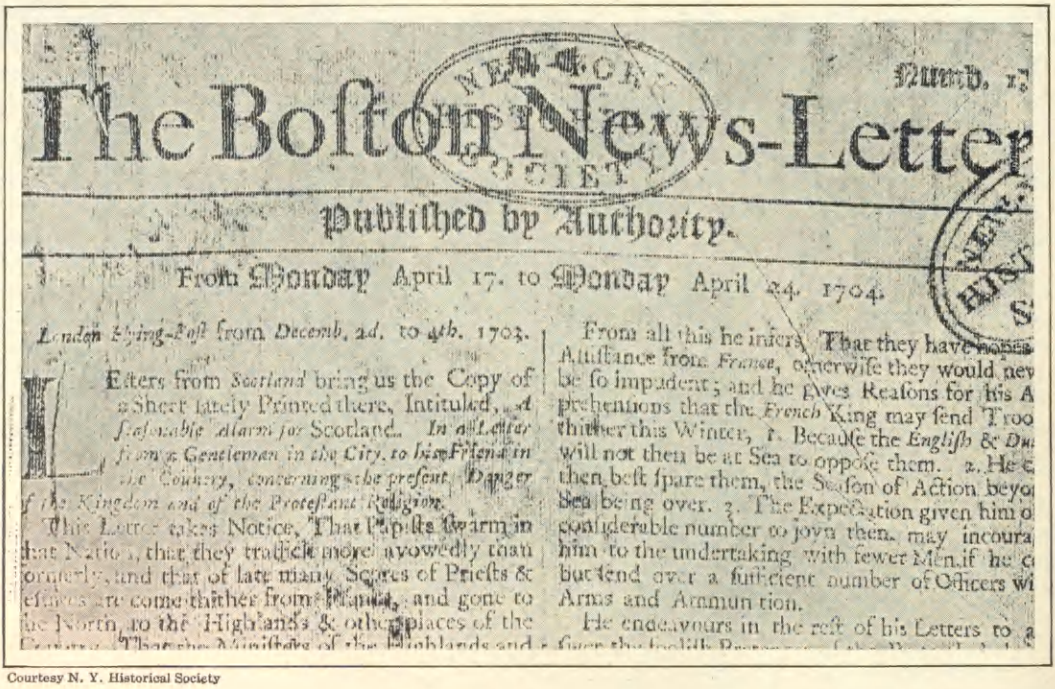
Especially did he encourage good writing. One morning he summoned a young reporter just on the staff and holding a slip cut from the *Sun* said: "I understand you wrote this. It is very nicely written—very nicely expressed. I congratulate you, and I thank you for writing it for my newspaper." It was a brief report of a breach of promise court case, in which it was admitted that the young man had not made a direct proposal; but what had attracted the chief was the judge's charge in which he said that "the glance of the eye, the modulation of the voice and the caressing touch of the hand were in themselves overtures that the young woman might reasonably accept as proposals of marriage."

For the obvious and the commonplace Dana had little use. "We must attract attention: we must make the paper interesting; we must make it talked about" was one of his admonitions. His criticisms were constant but almost always were kindly and welcome. He raised a great rumpus one morning over a news report of a prize fight in Hoboken between third-rate pugilists. "It is a miserable account of a bully good fight," he said. "Don't send a boy to do a man's work."

Always in full vigor of physical health, Dana enjoyed his work and enjoyed life. He was patriotic. He championed freedom and equality, the upbuilding of intellectual life and the refinement of social life. On occasion he wrote with a wonderful nicety of language; again with vigor and clearness; but when moved to wrath, with an audacity akin to ferocity.

Aside from his own superior workmanship his greatest editorial asset was the ability to gather bright men about him and inspire them to greater zeal, to eagerness or to enthusiasm for their work.—*Chester S. Lord.*

FIRST NEWSPAPERS IN AMERICA



Numb. 17

The Boston News-Letter

Published by Authority.

From Monday April 17. to Monday April 24. 1704.

London Flying-Post from Decemb. 2d. to 4th. 1703.

LEtters from Scotland bring us the Copy of a Sheet lately Printed there, Intituled, A seasonable Alarm for Scotland. In a Letter from a Gentleman in the City, to his Friend in the Country, concerning the present Danger of the Kingdom and of the Protestant Religion.

This Letter takes Notice, That Papists swarm in that Nation, that they traffick more avowedly than formerly, and that of late many Scores of Priests & Jesuites are come thither from France, and gone to the North, to the Highlands & other places of the Country. That the Ministers of the Highlands and

From all this he infers, That they have hopes Assistance from France, otherwise they would nev be so impudent; and he gives Reasons for his A prehensions that the French King may send Troo thither this Winter, 1. Because the English & Du will not then be at Sea to oppose them. 2. He c then best spare them, the Season of Action beyo Sea being over. 3. The Expectation given him o considerable number to joyn them, may incoura him to the undertaking with fewer Men, if he c but send over a sufficient number of Officers wi Arms and Ammunition.

He endeavours in the rest of his Letters to a

Courtesy N. Y. Historical Society

THE first purveyor of news in New England, which is to say on the continent, was Benjamin Harris, an Englishman of eccentric reputation. He advertised to furnish the country every thirty days with a report of "such considerable things as had arrived unto his notice." On September 25, 1690, *Publick Occurrances* was issued from a Boston coffee house, of which Harris was proprietor. For "reflexions" on his Indian policy distasteful to the Governor of Massachusetts, the small quarto sheet was suppressed. It was never revived after the first edition.

Fourteen years later (April 24, 1704), John Campbell, postmaster of Boston, brought out the *News Letter*. Part of the space was given to reprints from London papers. Local items in the first issue dealt with births, deaths and sermons. A report of a naval battle between England and France gave a "filip" to the otherwise staid columns. Subscriptions and advertising were received at the Post Office. The avowed purpose of the publisher in promoting the journal was to add to his scanty income as postmaster.

The *News Letter* was regularly published for fifteen years, and during this time it had no competitors. In its heyday it had a circulation of 300 copies. When Campbell was ousted from the postmastership, the new postmaster started a paper of his own, *The Boston Gazette*. The printer was James Franklin, brother of the celebrated Benjamin. During the next twenty years the *Gazette* was published by half a dozen Boston postmasters. As the *Massachusetts Gazette*, it became a power in the Colonies.

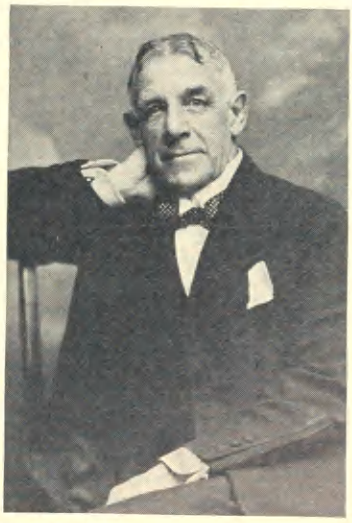
James Franklin founded the *New England Courant*, and in 1729 his illustrious brother established the *Pennsylvania Gazette* in Philadelphia. At the beginning of the Revolution there were about thirty newspapers published in the Colonies.

The first New York journal (1725) was printed on the press of William Bradford. It was called the *New York Gazette*. Bradford, a famous printer, had given young Benjamin Franklin work, when he ran away from Boston, and he was responsible for Franklin's going to Philadelphia. The oldest New York newspaper now published under its original name is the *Evening Post*. It was founded one hundred years ago by Alexander Hamilton and John Jay. For half a century William Cullen Bryant was its editor-in-chief.

THE GREATEST WORD IN ENGLISH

By EDWARD W. BOK, Editor and Author

ASK a hundred men to choose the greatest word in the English language and it is hardly likely that any two will agree. And yet if we scan the present horizon of political, economic, social and moral problems, domestic or foreign; if we approach the language with the idea of selecting the greatest word in it, as adapted to present needs, this one word naturally rises from all the other thousands and stands out supreme. It is the one word which, functioning in its fullest sense, would set at rest the world's problems, and it is because of its tremendously vital import to the needs of the present that it becomes, to my way of thinking, the greatest word in the English language.



EDWARD W. BOK

It isn't Love, it isn't Brotherhood. It isn't Friendship. It is the word that embodies the spirit of all these words.

The word is, *Service*. Not the service that serves only self, but the service that labors for the interest of others, and thus becomes the finest and best service to ourselves.

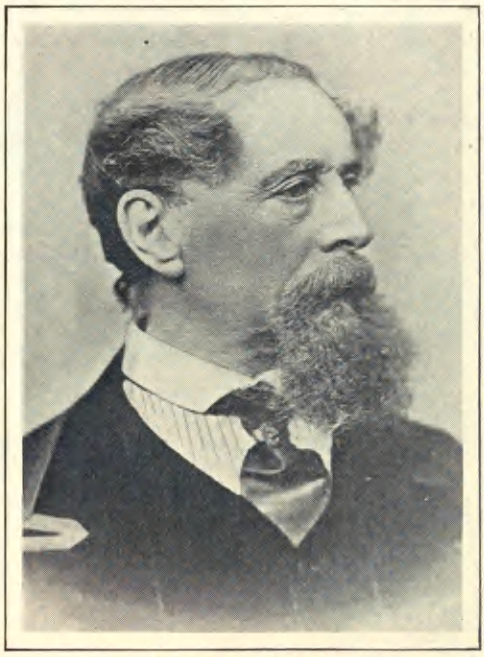
Scale the word as you like, let it run the gamut of Life in all its phases, and it holds its high place in the lives of men.

Naturally as one goes up the scale, the word assumes a more vital and far-reaching import. The greater the influence of the man who serves, the greater the extent of service. And so, when a man reaches the point where his life and his lifework influence the lives of others, or molds the opinions of others, the word takes on a significance of incalculable value. Whether this man shapes a newspaper editorial, or writes a magazine article or a book, if he is imbued with the idea of service, his work becomes potential. We realize too little in these days of much writing and hasty reading the responsibility of the printed word and the vitality of the thought we shape and send out. A true conception of service would, in the finest sense, revolutionize our newspaper press.

If an editor is content with simply making an assembly of stories and articles in his magazine, he does not, to my mind, fulfill his responsibility. Editorship is a stewardship to be discharged high-mindedly—and that means service to the public. Some editors accept this interpretation of their responsibility, and their periodicals stand among the distinguished successes of the day. Take the *New York World*, for instance, when it secured from its readers the means for the pedestal on which the Bartholdi statue today rests in New York harbor. *The Chicago Tribune* is another instance with its advocacy of a safe and sane Fourth of July. Likewise the weekly, *Life*, with its splendid enterprise, the "Life Farm" for poor city children. The *New York Times* is looked to each Christmas by its readers to point out the hundred neediest families in New York City. The *Christian Herald* is respected in thousands of homes for its collection of funds for the plague-stricken and starving peoples of the world. The *Literary Digest* has often shown its realization of public service by rallying to the assistance of world needs and collecting huge sums of money. *The Woman's Home Companion* did a splendid work with its "Better Babies" campaign. The success of *The Ladies' Home Journal* rests largely on its constant advocacy of measures of public service.

It is idle to say that this advocacy of measures for the public good does not fall within the scope of the modern periodical. As a matter of fact, it is an obligation upon the molder of public opinion that he must discharge if he is sensitive to the full responsibility of his position and opportunity.

It is the splendid duty, as well as obligation of the editors of our newspapers and magazines to nourish and stimulate the spirit of public service.



CHARLES DICKENS

The famous English novelist, lived in luxury and left an estate valued at a half million dollars, although he never received a cent from the tremendous sale of his books in the United States

AUTHORS AND THEIR EARNINGS

FOR something like two hundred years, the term "Grub Street," derived from a squalid London thoroughfare in the seventeenth and eighteenth centuries largely populated by impecunious hack writers, has been accepted as the figurative destination that fate reserves for one who seeks a career in authorship. Yet while penury has been the lot of many talented and industrious scribes, even in the days when literature was dubbed at best "a good staff, but a poor crutch," there were men who derived from the pen substantial material rewards. Chatterton perished miserably in his garret; Milton sold "Paradise Lost" for $25.00; Goldsmith was reduced to wheedling small loans; but Pope was an example of one who knew how to make poetry pay, and lived affluently from his literary earnings in his Twickenham villa.

It remained, however, for the nineteenth and twentieth centuries to bring authorship to fruition as a money winning profession. Figures best tell the story and its contrasts. For example, Dickens, who spent lavishly in his lifetime, left an estate amounting to nearly half a million dollars. Had there been in existence an international copyright, the great American popularity of Dickens would have doubled his earnings. As it was, his pen earned a steady ten thousand pounds a year from the time "The Pickwick Papers" and Sam Weller launched Dickens on the wave of fame.

UNEQUAL REWARD

Dickens' prosperity had a tendency to irritate his contemporary, Thackeray, but, toward the end of his life, Thackeray, too, began to enjoy large rewards. For every one of the short "Roundabout Papers" which he contributed to the "Cornhill" he was paid one hundred pounds (about $500). But the novel that many hold to be far and away his best, "Henry Esmond," he sold outright for the sum of one thousand pounds ($5000). Even that inadequate return for a masterpiece was satisfactory to him. Compared with his meager pen earnings the year before from "Vanity Fair," it seemed a rich reward.

The great French contemporaries of Dickens and Thackeray enjoyed varying degrees of financial prosperity. The prodigal Dumas, though often without a single gold-piece in his pocket, made, in the day of his popularity, between sixty and eighty thousand dollars a year. Balzac was a consistent money winner with his pen, though his earnings were usually mortgaged long in advance through his fondness for embarking in visionary ventures. But Eugene Sue was the glaring example of conspicuous financial success. He was paid twenty thousand dollars for the right to print his "Mysteries of Paris" in daily instalments. A fabulous price for the day, but so popular did the tale prove that copies of the newspaper were not sold, but rented out at ten sous for half an hour. Practically the same terms were received by Sue for "The Wandering Jew." On the other hand, a book destined long to outlive all Sue's novels, Murger's famous "Bohemia," was sold outright for twenty dollars.

PIONEERS UNDERPAID

Hard was the plight of most of the early Americans who depended upon their pens for a living, Washington Irving being the conspicuous exception. For "The Gold Bug" Poe received $100, but that was the prize-winning story in a competition. Many

SOME OF BEST PAID THE LEAST

of Poe's most fantastic tales were sold for $5 apiece. So, considering his vast production in a brief lifetime, it is plain that it was inadequate payment rather than lack of industry that was responsible for his habitual destitution.

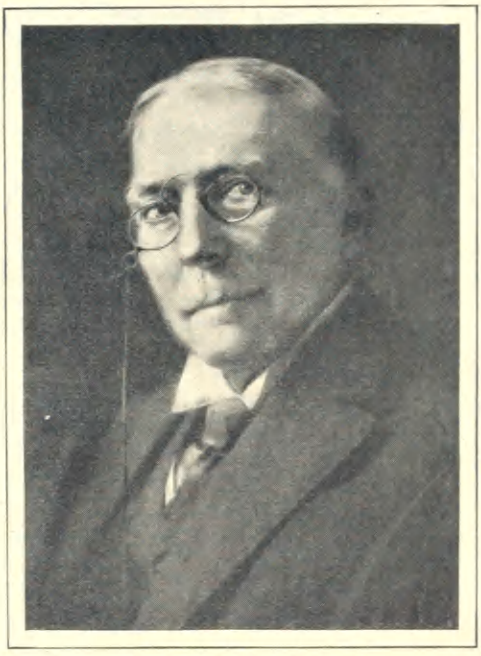
SOME BEST SELLERS

To turn to the moderns, either of today or of recent yesterdays. Prodigious money-makers of the eighteen-eighties were the novels of Archibald Clavering Gunter. His first novel, "Mr. Barnes of New York," was rejected as hopelessly unfit by nearly every publishing house in America before the author brought it out at his own expense and disposed of two million copies. Another great "seller" of the eighties was "Ben Hur." There was, in Indianapolis, an apartment house popularly known as the "Ben Hur flats" for the reason that Gen. Lew Wallace had erected it with part of the profits derived from the famous book.

About twenty-five years ago everyone was talking of "Trilby." The fame of the book was largely American made, just as it was an American who persuaded George du Maurier to forsake for awhile his "Punch" pencil, and try his pen. Du Maurier's first novel, "Peter Ibbetson," was financially only moderately successful. Then he wrote "Trilby," and was astonished and delighted when a New York publishing house offered him $10,000 for the American rights. Later the publishers generously cancelled the original agreement, substituting a royalty basis that vastly augmented the author's earnings from the book. Fifty thousand dollars was the price paid for the American rights of Du Maurier's last novel, "The Martian."

STEVENSON STRUGGLED

Stevenson was poorly paid till near the end of his life. In his last two years he had to do "the labor of an elephant," as he expressed it, to support his establishment at Vailima, Samoa. The real return from his books came after his death, posthumous royalties amounting to approximately $25,000 a year over a long period. Once Kipling tried vainly to sell some of his best Indian tales for $50 apiece. Now he can command $5,000 for the American rights of a short



JAMES WHITCOMB RILEY

American poet whose verses on "An Old Sweetheart of Mine" are the most profitable bit of writing on record. Riley's earnings from this poem amounted to $500 a word at the time of his death

story. When his rate had reached a shilling a word a man sent him a shilling postal order with a request for a sample return. Kipling complied with the word "Thanks." For the first Sherlock Holmes story, "A Study in Scarlet," Conan Doyle was paid $125, or at the rate of about a quarter of a cent a word. For a later series involving the famous detective, serial rights alone brought the author $2 a word.

Eighteen hundred dollars apiece was the price paid Booth Tarkington for magazine rights to "Penrod" stories that average perhaps two thousand words. Yet "Penrod" is not Mr. Tarkington's biggest money winner. "Monsieur Beaucaire" was a tale only eleven thousand words in length. Probably the author himself has not been able to keep count of the earnings from it as serial, book, play, and opera libretto.

Measured by the number of words, the most profitable bit of writing of all time seems to have been James Whitcomb Riley's "An Old Sweetheart of Mine," which, brought out again and again in new dress, had earned a sum conservatively estimated at $500 a word and continues today to be a staple in the literary market.

THE MYSTERY OF AMBROSE BIERCE

By RICHARD BARRY, Author and Journalist

THE "cosmic journalist" we have in many incarnations. His chief embodiment was Voltaire—bitter as gall, powerful as picric, and prince of worldlings, defier of the mob whose servant he was, darling of kings whose menace he never ceased to be. His present manifestation is Arthur Brisbane, with tongue in his cheek surveying the passing show, flanked by a bust of Voltaire and a signed photograph of John L. Sullivan, beneath which he writes his phillipics against prize fighting.

However, on the American continent there was never but one cosmic journalist in the superlative sense—Ambrose Bierce.

Bierce alone stalked through this life with the superb poise, the impenetrable mystery of the Master. Already around his memory gather the myths of a legendary character. Despite the fact that he lived but yesterday and that many now here knew him fairly well the facts of his life are shrouded in mist. Edgar Allan Poe was the most romantic figure in American letters, but, in some ways, no more so than Bierce.

Courtesy Neale Pub. Co.

BIERCE—ENIGMA

Chiefly, there is the mystery of his death. Or, is he dead? Out of Mexico, where he was last seen, came a year ago an account of his supposed execution in 1914—a hurried execution by a casual marauding band. This is now the accepted version of his exit. We are asked to picture this erect, thin, white-haired esthete, well over seventy years of age, facing the ragged firing party calmly (of course) and with—shall we say?—a hint of the perpetual sneer on the firm pressed lips. So be it. Thus he went from a life for which he never had much use.

Did he go consciously to such a death? There is reason to believe so, for to the last person who saw him (except his anonymous traveling companions and the rough peons of his final days) a poetess whom he had fostered, he said, "I shall never return."

All his life he sought death rather than evaded it. In the Civil War, during which he rose from private to the rank of Major, he exposed himself with what has been described as almost a fanatical willingness to die. Ever after he constantly sought peril. He might have said "as human life is the cheapest thing on earth, why defy Nature's prodigality with our petty thrift?" But it took him over seventy years of wandering and suffering, and he finally had to seek the jungle of Mexico to snuff out one of the most brilliant brains of his generation.

The real mystery of Ambrose Bierce transcends the apocryphal account of his death, or the query as to the reason for his withdrawn and sheltered life in his middle years. The real question concerning him is: why was he a rebel from first to last? For he was consistent. He died as he had always lived; defiantly obscure, yet brilliantly provocative of inquiry.

He was without a rival in wielding the poniard of irony. In his hands the scalpel of cynicism penetrated every hidden recess with unerring skill. He was Juvenal, sharpened; and Swift, dramatized. De Maupassant, Poe, O. Henry, were not rivals but colleagues of equal rank in mastery of the short story. His literary skill equaled theirs, but his incisive mind cut deeper. In summoning sheer terror no one was in his class. He was the arch prince of Literary Darkness. His light shines with clinging phosphorescence, mysterious as the night, and, like it, eternal.

ENTER EUGENE O'NEILL

By ANNA FOSTER CHAPIN

THE spotlight of publicity has swung full on the figure of Eugene O'Neill, dramatist. James O'Neill, famous actor, was his father—and a sadly disappointed father. He had tried to make something of his youngest son, and failed.

The elder O'Neill secured a lasting hold on the memory of his public in "The Three Musketeers," and his "Monte Cristo" became a legend among American playgoers. Traveling about with his parents, the boy got a certain schooling in stage technic, and he had an inherited instinct for the theater; but he refused to become an actor.

Eugene went to Princeton and Harvard; he was expelled from both. He was prankish and unruly, and showed no inclination to attend to any serious plan for his future. He pursued obscure adventures that took him away for months. When at last he shipped as a sailor before the mast, his father gave up. "You try," said James O'Neill to a friend. "Find out what he really wants to do, and help him if he'll let you."

Photograph by Nickolas Muray

DRAMA'S UGLY DUCKLING

It appeared that what the erring one wanted most to do was to write—to write plays of the sea. He was encouraged to put down his thoughts on paper. To the friend's surprise, and most of all to the father's, the embryo tales had the savor of the ocean and the crude vigor of ocean-going men. The characters were his shipmates; the incidents in his sketchy little plays were taken from the tense, raw, salty, human things that happened on board tramp and whaler. He had seen visions with a backdrop of waves and sky. He had partaken of realism with his everyday fare.

When O'Neill's first plays came to production, his audiences reacted at once to their primal appeal. The dialogue was in the idiom of deck and fo'c'sle. A sailor himself, he projected the life of sailors—"just one ship after another, hard work, small pay, bum grub." He was the first sea dramatist.

The O'Neill workshop on shore was a cottage, neighborless and wind-driven, on the Massachusetts coast near Provincetown. The waves he had ridden as a wilful, wishful boy rolled to his doorstone, and boomed through his plays. The company of amateur actors called the Provincetown Players staged his one-act dramas, and introduced them to New York.

His first long play, and first play of the land, was "Beyond the Horizon," a high-powered drama in the unemotional setting of an American farm-house. O'Neill depicts life exactly as it, with grim stark realism, disregarding sentimentality and conventionality. Some critics award "Beyond the Horizon" the supreme place among American dramas. It won the Pulitzer prize for the best American play produced in the American theater during the year 1920.

This year O'Neill has turned another trick with a play of an entirely different character. "The Emperor Jones" is the result of one of the playwright's voyages to the African coast. It plumbs the primitive—"is a stupendous adventure in the abysses of racial soul." The chief actor is a Negro, Charles Gilpin. His life is "another story" that we may tell later. In "The Emperor Jones" O'Neill has done something original and eventful. This contribution to native drama, alone, justifies the claims made for him as the most interesting of latter-day playwrights.

THE RIDDLE OF SALISBURY PLAIN

Courtesy *Scientific American*

RESTORATION OF STONEHENGE, RELIC OF A VANISHED RACE, UNDER WAY

RESTORATION of Stonehenge, the famous stone ruins in Wiltshire, England, has revived the age-old question: who built the ancient temple known as the "Riddle of Salisbury Plain?" The British Government is replacing the huge stones in their original positions.

Stonehenge is in Wiltshire, 80 miles from London. It consists of two circles of stones, one within the other; the whole surrounded by a double wall and ditch 1,100 feet in circumference. The outer circle is 105 feet in diameter and consisted of 60 stones, 30 upright and 30 horizontal. The upright stones are about 16 feet high and 6 or 7 feet thick. About 9 feet within the circle is the inner circle of blue stones, originally 40 in number, and within that a double row of 19 stones in the shape of a horseshoe, one within the other. The open part of the horse-shoe points to a stone called the "Friar's Heel." On June 21st, the sun rises exactly in a line with the center of the horse-shoe and throws a ray through the open ends on the altar stone.

Excavations in 1901 brought to light 100 stone implements which put to rest the current belief that Stonehenge was a Druid temple. The Druids were priests of the Keltic tribes that Caesar found when he invaded Britain with his Roman legions. The Druids had bronze and iron implements, so Stonehenge antedates them, although it is probable that the Druids did use Stonehenge for a temple.

Archaeologists of all ages have differed as to the age and origin of Stonehenge. They were nearer agreement on the Druidic theory than on any one of the many advanced. Today they cannot fix the date of construction with any degree of certainty, but are generally agreed that it was the work of a race of sun-worshipers who inhabited Britain at least 1800 years before the birth of Christ.

Other theories are that it was a Buddhist temple, a fortress, a meaningless pile which the Romans compelled the Britons to build to keep them quiet. Professor Flinders Petrie, a prominent archaeologist, thinks that it was built from the proceeds of a war indemnity.

Equally as puzzling as the question of who built Stonehenge is the question of how it was built. Some of the stones weigh 30 or 40 tons each. How they were moved and set up by a race of men that had stone implements only is still a mystery.

In restoring the stones to their original positions, extreme care was taken to avoid damage. Each stone was surveyed, crated and swathed in huge felt pads. A powerful crane lifted them into place. As it stands now, Stonehenge while not "as good as new" is a remarkable relic of a civilization 4,000 years old.

Charred fragments of human and animal bones found by excavators show that Stonehenge was a temple where a cruel deity was worshiped with bloody sacrifices. What race? And when?

Roman, Saxon, Viking, Carl and Norman have passed, but Stonehenge stands in sombre Salisbury Plain, its monoliths holding their secret as impenetrably as the Sphinx on the banks of the Nile.

HE CONCEIVED A NEW UNIVERSE

ISAAC NEWTON, speculating on why an apple fell, worked out the law of gravitation. Albert Einstein, Swiss scientist, while sitting and thinking—for which he was paid $4,500 a year by the Kaiser Wilhelm Academy for Research—saw a laborer fall from a Berlin apartment house. Upon learning that the falling man felt no downward pull, the scientist amplified his "relativity" theory to include gravity and thus revolutionized thought in at least a part of the world of science.

ALBERT EINSTEIN

Einstein's theory is too much for a person unversed in physics to grasp. He has worked it out mathematically. While it is not true that there are only twelve men that understand the mathematics of it, the number is limited. Eugene Higgins, American millionaire, offered $5,000 for the best popular essay of 3,000 words explaining Einstein. Few of the three hundred essays submitted could be called popular, dealing as they did with mathematical abstractions.

Einstein's theory changes man's fundamental conception of the universe. It would be but the interesting guess of a scientist, except for one fact: experiments have proved two of his contentions to be correct. He said that a ray of light did not travel in a straight line from a star to an observer on earth. Astronomers at Sobral, Brazil, and Principe, an island off the coast of Africa, verified this with photographs taken during the eclipse of 1919.

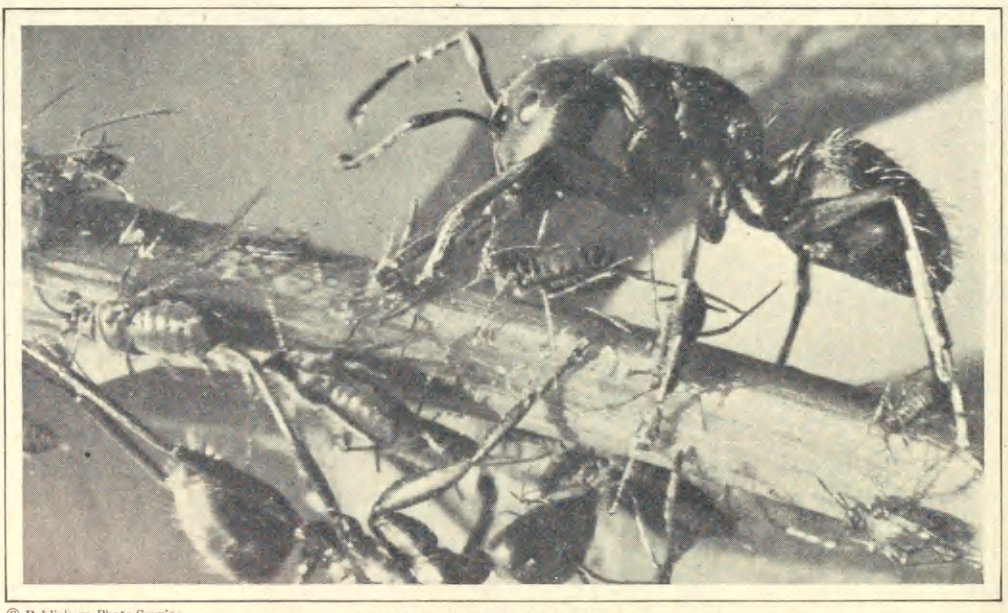
How Einstein's theory changes Science's conception of the universe, can be understood only after involved explanation. However, some of the conclusions it leads to are astonishing enough to the average man. In Einstein's universe space is defined and has boundary limits; parallel lines can meet; there is no such thing as absolute time; yardsticks may vary in length according to the way we hold them; a man moving with the speed of light would never grow old in years; the weight of a body may depend upon its velocity; the shortest distance between two points may not be a straight line; there is no such thing as a "really" straight or a "really" curved line, and no action can exceed the speed of light!

Our old universe required but three dimensions to explain it—length, breadth, and height: Einstein's universe requires a fourth. In what direction does this fourth dimension lie? the average man asks, and it is here that his difficulties commence.

Man has regarded space as immeasurable; Einstein virtually says that man and his world are enclosed in a space like a nutshell, the breadth, height, depth and curvature of which he can measure with a footrule.

The workaday world is not disturbed in the least by the Einstein theory; whether or not Einstein is right is of little consequence to the average man. It does not, as has been believed, destroy Newton's laws. Einstein, himself, said on this point: "No one must think that Newton's great creation can be overthrown in any real sense by this or by any other theory. His clear and wide ideas will forever retain their significance as the foundation upon which our modern conceptions of physics have been built." It has, however, precipitated a revolution in the physical conception of the world. Professor Planck, winner of the Nobel Prize for discoveries in physics, says: "It surpasses in boldness everything previously suggested in speculative natural philosophy and even in the philosophical theories of knowledge."—A. A. Hopkins, editorial staff, *The Scientific American.*

AN INSECT THAT COMBS ITS HAIR



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A REAL CLOSE-UP OF AN ANT

This photograph, made with the aid of the microscope, shows clearly the "comb" on the hind leg. The ant is milking an aphid or ant-cow. The aphid secretes a fluid valued by the ants for food. Herds of aphids are milked regularly and otherwise cared for

"GO to the ant, thou sluggard," said the wise King Solomon. He might have addressed this advice to the sloven as well, naturalists say, for the ant is also the dandy of the insect world.

Ants spend much of their time primping. Cleanliness is as much an essential of their gospel of living as industry. They have complete toilet outfits including fine and coarse combs. Their bodies are covered with a fine hairy coat interspersed with spines and bristles. Working ceaselessly in the earth, as they do, these coats become filled with dirt, a condition which, apparently, they cannot endure, for they brush, wash and comb until clean again.

In this process, the ant finds its tongue the most useful implement. It is lined with hairy ridges that are covered with tiny curved "bosses."

The chief comb, however, is attached to the hind legs. It has a short handle, stiff back and is tooth-edged. It can be swung freely and is applied to the coat directly and effectively.

Ants have no particular time for making their toilet. They do it whenever they feel like it, whether eating, working or on the march. An ant will stop in the midst of work, climb to a nearby clod and, standing on its hind legs, ply teeth, comb and tongue. From top of head to tip of hind legs it goes, smoothing out ruffled hairs and removing the particles of dirt. Finishing with a few touches, it stretches, calmly climbs down from its pedestal and loses itself among its fellow-workers.

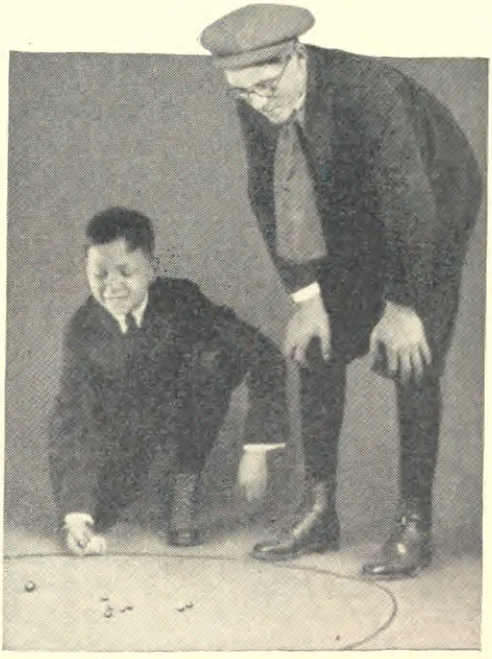
The acrobatic skill of ants exhibited during this washing process is amazing. They climb to the tips of grass blades, hang by their claws and turn around and around. The blade is held with the third and fourth pairs of legs which are spread at length while the head is cleaned with the forelegs or the abdomen combed.

Sometimes two ants will clean a fellow-worker. Clinging to the grass, a foreleg on one side of the stem and a hind leg on the other, they stretch out at full length. The ant that is being cleaned hangs in a like position.

The voluntary maids will go over their subject vigorously with tongues, teeth and combs, washing and brushing her coat until it is clean and sleek again. Ants appear to enjoy these experiences for they will submit complaisantly to the most violent attentions of the others.

Is his whole heart in Play?

Many of the pleasures your boy so happily enjoys now will count for little when he embarks upon the career you have planned for him. And your little girl—how rapidly is she acquiring sound understanding of the many intensely interesting yet whose matters that will mold her into the beautiful character you want her to be?



Here's fun that builds character

NOW—in the formative period, your boy or girl is most receptive to impressions—and these childhood impressions may mean the making or breaking of a future. Right now your children are forming the background of careers—learning the A B C's of character and culture. They are looking for examples to emulate, ideals to follow.

It is the double purpose of "St. Nicholas" magazine to amuse and develop children through good reading. It brings to them each month a wealth of fine short stories and serials, interesting pictures, true stories of other lands, little talks on history, the wonders of science and nature, facts from the lives of great men and women, sports and pastimes for in- and out-of-doors, comics, riddles, clear little statements of public questions. It helps the youngsters with their hobbies, offers prizes for drawing, writing, photography, etc.

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You may send "St. Nicholas" on approval. Upon receipt of the first copy and bill, I will send $4.00 for a year's subscription if I want the magazine. If not satisfied within ten days of receipt of first copy I will notify you to cancel the order and will then pay only 20c (slightly more than half the price of the first copy).

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THE OPEN LETTER

In the letters that come to The Mentor office, we find many exclamations of pleasure over the pictures that we publish. "One never tires of the splendid illustrations in The Mentor" writes a reader in Richmond, Va. From the very first, the thought of beautiful pictures has been foremost in our minds. We have always regarded it as an essential feature of the Mentor Plan to lead our readers through the various fields of knowledge by the pathway of pictures.

★ ★ ★

We have enjoyed rare privileges in the matter of art material. In the field of Travel we have had the exclusive rights to publication of the splendid pictures made in the course of years by Mr. Dwight L. Elmendorf. We also publish the travel talks and illustrations of Mr. E. M. Newman. In the field of Fine Art we have been particularly favored. Art Museums all over the land have given The Mentor not only full privileges, but cordial co-operation. Owners of famous private collections have been generous in granting rights of publication of their masterpieces, and artists have responded readily to our request to print their pictures.

★ ★ ★

Let us glance over some of the numbers of The Mentor. The subject of Oriental and Chinese Rugs was covered by John K. Mumford, one of the best authorities on the subject in this country, and his article was illustrated with pictures in full colors reproducing magnificent rugs purchased by Mr. Mumford for some of our great private collectors. We carried $50,000 insurance on six of these rugs while we had them in process of reproduction. Our article on Butterflies was written by Dr. W. J. Holland, who owns one of the finest private collections of Butterflies in the world. The illustrations were full-color reproductions of rare and beautiful specimens owned by Dr. Holland. On subjects like the Weather, Forestry, and Conservation we enjoyed the co-operation of the Governmental departments in Washington. Mr. Talman of the Weather Bureau wrote the first article, and Mr. Henry S. Graves, United States Forester, wrote the other two. The pictures came from the Government departments. Our articles on Prehistoric Man and Animals were prepared by Drs. Matthews and Wissler of the American Museum of Natural History, and illustrated by pictures supplied by the Museum. In covering the subject of Chinese Painting, we gave our readers reproductions of rare and beautiful examples of Chinese Art, supplied to us by Mrs. Ayscough of Shanghai, the author of the article. Our Greek number was illustrated with magnificent photographs made under authority of the Greek Government, by Frederick Boissonnas, a most distinguished photographer, who has made pictures for many of the governments of Europe. Our Indian number contains many beautiful reproductions of paintings, and several masterpieces from the famous Curtis collection of Indian photographs. Mr. D. F. Barry let us reproduce his copyright picture of Chief Rain-in-the-Face, and other owners of fine Indian pictures, including Mr. Grinnell, author of the article, contributed to this remarkable number. The Ireland article was illustrated with photographs made by Mr. Newman during a special trip of observation. Rabindranath Tagore's article contains many interesting and beautiful pictures of Indian subjects supplied by Dr. Tagore and his friend, Basanta Koomar Roy.

★ ★ ★

In this number we present something altogether unique in our Gravure section—a series of pictures specially photographed for The Mentor, in which the whole story of gathering and printing news is told, from the event—in this case, a fire—to the printed sheet that we find on our breakfast table next morning. In the forthcoming number devoted to the Motion Picture World, we shall give many interesting and illuminating illustrations made for The Mentor by order and under the direction of Mr. D. W. Griffith and other leaders in the motion picture industry.

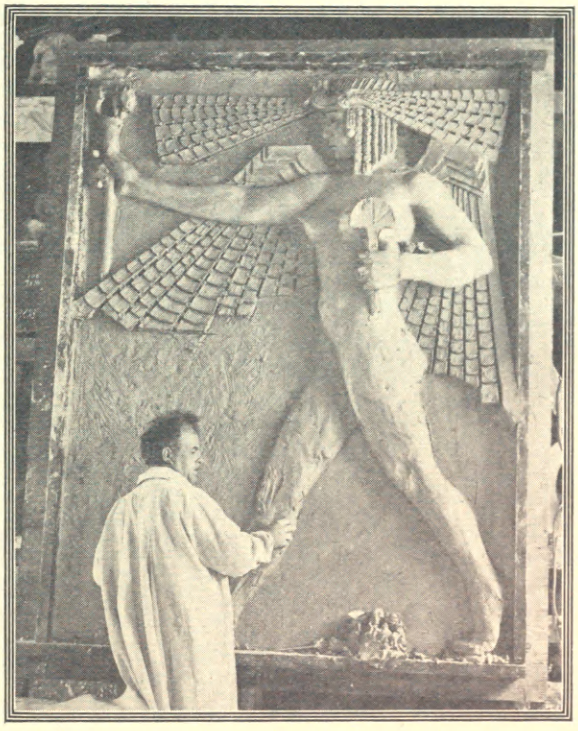
In every case, we give our readers the best and most informing material in picture as well as text.

W. D. Moffat

EDITOR

MOTION PICTURES

THE MIRACLE OF MODERN PHOTOGRAPHY



Finn Haakon Froelich, an eminent Western sculptor, modeling one of the decorations used in a mammoth film spectacle. This is an example of how artists are called in to beautify and dignify motion pictures

On the very day I had expected to sail for America, I went instead to No. 10 Downing Street to meet David Lloyd George, Premier of England. I was proud that I had been elected to record and dramatize the stupendous events that were then making history. Most of all, I was thrilled at this acknowledgment of the power of the moving picture to narrate, to stimulate, and to perpetuate.

GRIFFITH AND BITZER "SHOOTING" A SCENE

VISION THE PRIMAL FUNCTION

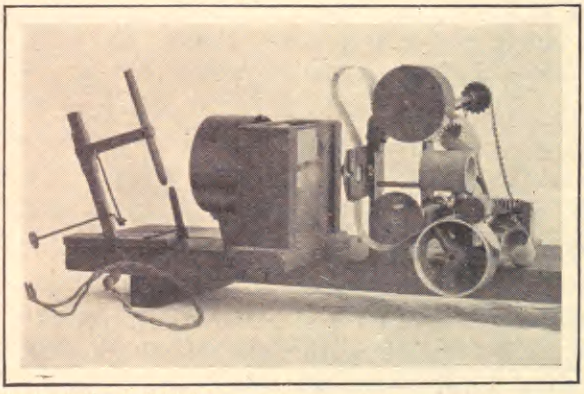
Of one hundred impressions received by the mind, eighty-seven are conveyed through the eyes. The love of movement is instinctive in us. We like to see the world go by. And the world, and his wife, and his children give universal pleasure when they act out their lives on the "vertical stage" of the screen.

A learned man tells us that when we look on a motion picture we are doing the easiest thing man can do," so far, at least, as concerns the intellectual reactions aroused by the presence of an outer world. The movie eye is primeval. The movies were born almost in the mud of the world's first seas. To attend the movie is to be primitive. Because the movie demands for its understanding and enjoyment the use of little more than the most primitive of all man's faculties, it wins a frightful popularity." Mr. Dana does not assume, of course, that all moving pictures are "easy to look at." I am sure he agrees with me that many of them are very hard on the eyes, and on the intelligence.

Pictures were man's first means of transcribing thought. On the walls of cave dwellings, on lofty cliffs, we find these primitive thoughts cut into the rock. The image of a horse is as easily understood by a Finn as by a Turk. A picture is the universal symbol, and a *picture that moves* is a universal language. Moving pictures, someone suggests, "might have saved the situation when the Tower of Babel was built."

The cinema camera is the agent of Democracy. It levels barriers between races and classes.

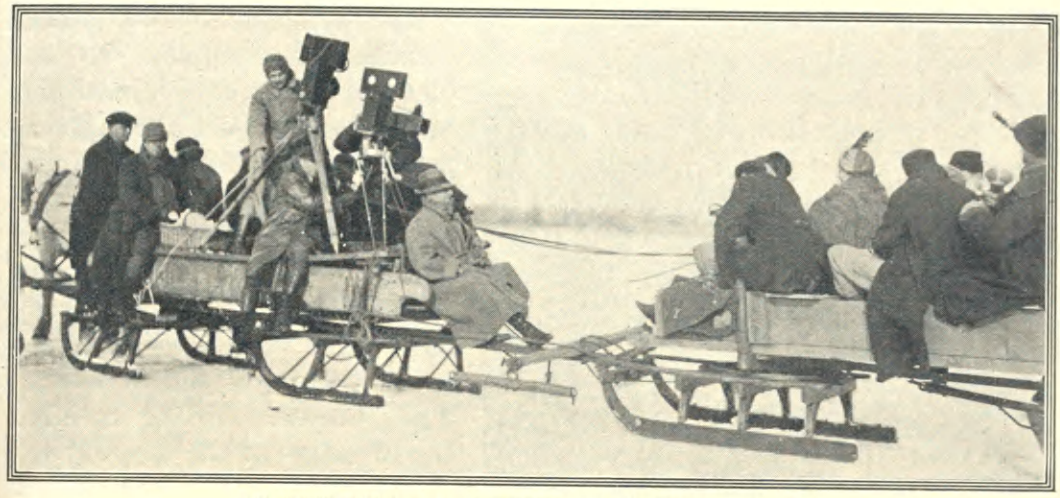
Visual demonstration is the most impressive means of teaching.



Courtesy Smithsonian Institution

THE "GRANDFATHER OF PROJECTORS"

The Jenkins invention now in the National Museum, Washington



FILMING THE SLEIGH-RIDE SCENE IN "WAY DOWN EAST"

Propagandists know this. Educators say that lessons learned with the aid of the moving picture are the least easily forgot.

Motography unfolds the petals of the flower, discovers the secrets of the butterfly. It brings us face to face with great events. It carries us to the peaks of mountains, to the bottom of the sea, and to the poles—literally to the ends of the earth.

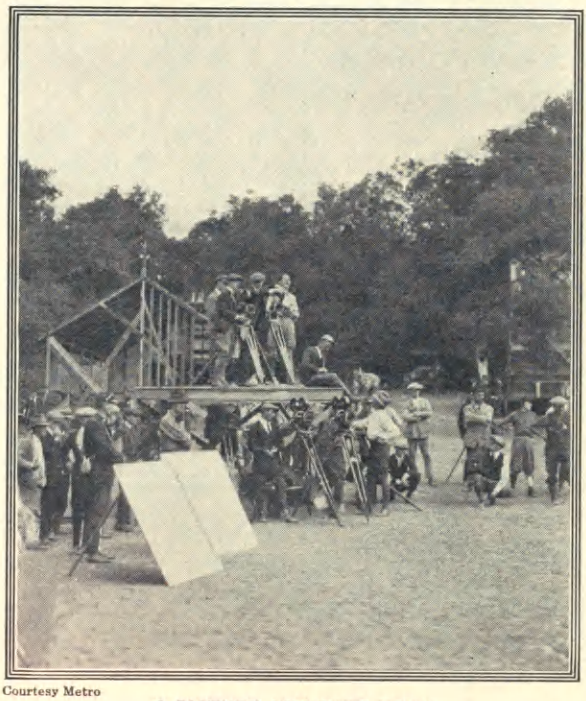
The camera often tells the story of a popular novel better than the pen does. I think this is true of many pictures that have been made from famous books. On the screen Ibsen, Hugo, Barrie, Mark Twain, have risen to new triumphs. Naturally, a director must know what is appropriate to the pantomime play and what is not.

In translating the theme of a play to the silversheet, the moving picture director has several obvious advantages over the stage director. Scenes and backgrounds that can only be referred to in dialogue can be shown in the photographed play. The "close-up" supplies the photodrama with a tool more effective for revealing character than any device of the theater stage. The "flash-back" is useful in knitting together the episodes of a story and in explaining motivation.

SCIENCE AND INVENTION

Who invented the movies? Few of the thirteen million patrons who daily attend America's thirty thousand moving picture theaters realize how long and imposing is the gallery of cinema inventors. Many men of different nationalities have shared in the mechanical development of this most popular form of dramatics.

It was Lucretius, a Roman physicist, born about 96 B. C., who first recorded the scientific principle of moving pictures, or, rather, of pictures that appear to move. Motion in pictures is an illusion. You have seen a boy whirl a stone at the end of a string, and you recall that you saw a continuous circle. The eye retains the impression of an object approximately one-sixteenth of a sec-



Courtesy Metro

A PICTURE AT WHITE HEAT

The director and his battery of cameras in action during the making of a big scene in the screen version of Ibanez's "The Four Horsemen of the Apocalypse"

ond after the object passes on or disappears.

When the boy swings the stone, the vision of the beholder retains the reflection of the image a fraction of a second after each successive degree of revolution. Vision, in other words, *persists*. The picture of one position blends into the next. When a strip of film is run through a camera, and is thrown on a screen by means of light, you get the effect of uninterrupted action. Look at the ribbon-like film after it has been developed and printed, and you will observe a series of images. Only by following carefully from one to the other can a change in pose be observed. A "moving picture" is actually a series of "still" photographs of changing poses, magnified approximately 35,000 times by a projection lantern.

The principle of persistence of vision was applied to the blending of successive positions of a moving object about a century ago, in a crude experiment called a "Thaumatrope."

A forward step in moving picture invention was Plateau's Phenakistoscope. Quite a group of foreign inventors were engaged at this time on similar efforts. The Phenakistoscope utilized the principle of the intermittent shutter used today. The "Wheel of Life," invented in 1834, is still turned out by toy makers for the amusement of boys and girls. This was the first animated-picture machine that had a popular sale. Many others followed, some of them of serious intent.

The inventor of the Kinematoscope was a Philadelphian, Dr. Coleman Sellers. His application for patents made it clear that each image should be stationary for the moment it was in view. It was vital to the success of the invention that the reflection of one picture should be timed to remain on the retina of the eye until the next one came into view. Dr. Sellers was also the first to use the plate bath of glycerine, predecessor of the now familiar dry-plate process.

A red letter date in the evolution of motion-analysis by photography was the year 1872. To prove whether or not a running horse had all four feet off the ground at one time, an English surveyor, Edward Muybridge, made a series of pictures of a California race horse. First he lined up twenty-four cameras a few inches

apart. Strings were stretched from the camera shutters across the track. When the horse came by, his hoofs caught the strings, and exposed the plates by releasing the shutters. The experiment determined that at periodical moments the horse was entirely clear of the ground. A few years later Muybridge startled the world by photographing the beating of a dog's heart.

The invention of the roll film was a development as necessary to the future of the industry as the invention of the needle-point eye was to Elias Howe's sewing machine. About thirty years ago an Englishman, W. Friese-Greene, demonstrated its use in a picture twenty feet long, showing the traffic at Hyde Park Corner, London. You will smile at the idea of a moving picture that consumed a third of a minute in the "running." But, said Mr. Friese-Greene, (the cable brings news of his death as I write), "It was a triumph and a sensation, I assure you."

The flexible film used in a motion picture camera of standard type is the same size as the one introduced by Edison thirty years ago. The roll is one and three-eighths of an inch wide; a thousand feet make up a "reel." The film is gauged by perforations on the sides to catch the sprockets that guide the strip through the camera and projection machine. It takes thirteen or fourteen minutes to run off a reel. Thomas Edison, inventor of the celluloid film, first exhibited his Kinetoscope in 1893. Edison, the American, Lumière, the Frenchman, Paul, the Englishman, all had a part in furnishing amusement to a world-audience of picture patrons.

THE FIRST "MOVIE SHOW"

On a June day in 1894, an amateur inventor named Jenkins arrived at his home town in Indiana on vacation from his job in the Treasury Department, Washington. A mysterious box had preceded him. When it was unpacked, the neighbors were called in to see what was to be known in history as "the first movie show" —the first exhibition of motion pictures projected on a screen.

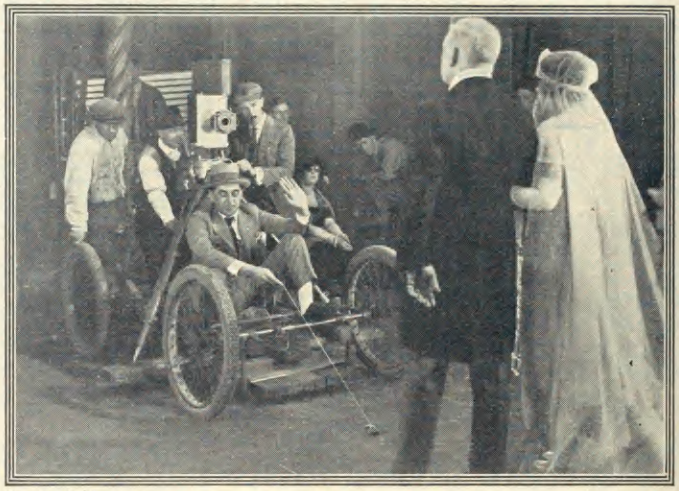
When Jenkins exhibited his motion pictures at an Atlanta exposition, people refused to pay the admission

Courtesy Goldwyn

NATURE NO OBSTACLE

When the play calls for "snow-stuff" the motion picture producer often goes miles to get it, and, as in this case, augments the natural light with arc lights

fee in advance. The exhibitor had to let his patrons go in first and see the miracle, before they could be convinced that it was not a swindle. A combination of the Edison and Jenkins-Armat interests resulted in the creation of the Vitascope, a radical improvement over the picture machines into which one looked through an eye-piece, or "peep-hole."

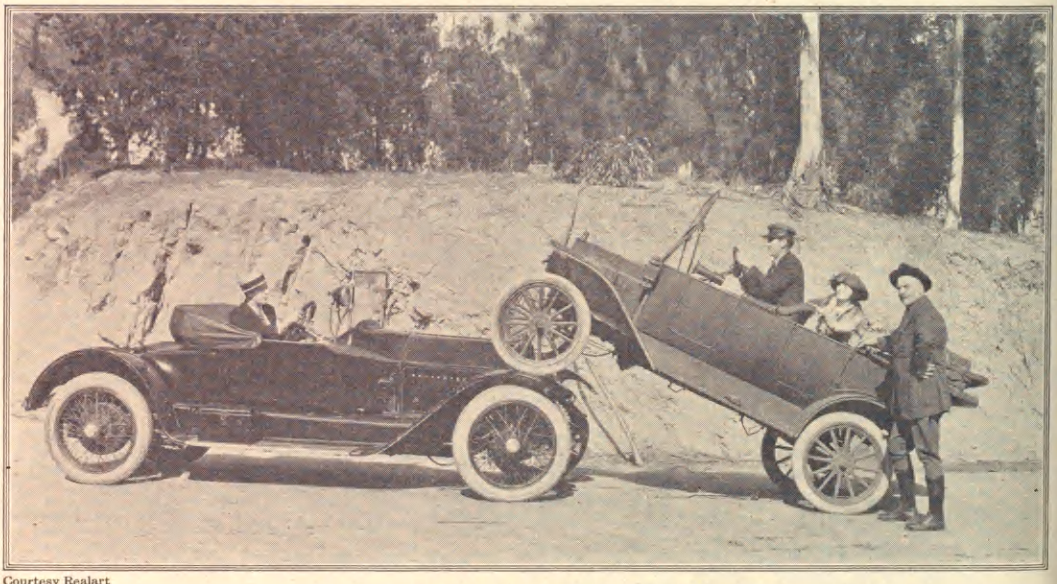


Courtesy Goldwyn

WALKING THE CHALK LINE

This director takes no chances with the success of his wedding scene. He sits on the traveling camera platform trailing a weighted line to keep the actors in the middle of the imaginary church aisle

Even those of us that are not very old can remember the names of some of the first motion picture stories,—"The Buffalo Horse Market," "The Black Diamond Express," "Niagara Falls," "The Pillow Fight," "Feeding the Pigeons." The first "long" film was "The Great Train Robbery." It consumed 1800 feet of film, and cost four hundred dollars to produce. Great was the public's astonishment in the viewing of it. A dozen years ago "picture acts" became a part of the program of popular vaudeville houses, and at the Eden Musée, in New York, Edison "topicals" were shown. It was about that time that



Courtesy Realart

STAGING AN AUTOMOBILE WRECK

Behind the screen with director and cameraman

Courtesy Realart

MAKING AN EMOTIONAL CLOSE-UP

The director rehearses the actress until her performance satisfies him; lights are called for and the camera begins to grind. She must go through the scene amid a running fire of orders from the director

I began to make film plays at the old Biograph Studio on Fourteenth Street, New York.

In the thirteen years that have passed, I have made five hundred pictures. Some of my early photo-tales were created under strenuous conditions. When I proposed making a two-reel drama, my backers declared that people would never sit through such a long picture. We compromised by cutting the first two-reel picture in half. We named the first part "His Faith," and the second, "His Faith Fulfilled." The public liked it and asked for more. Not long afterwards I made a five-reel picture, "The Escape," and then the first ten-reel drama, "The Birth of a Nation."

Most screen plays are now five reels (5,000 feet) long. A few "master productions" run to ten reels. Weeks of research, experiment, rehearsal; the talent and patient industry of authors, continuity writers, directors and actors, of artisans, artists, decorators, costumers, lighting

Courtesy Metro

A BATTERY OF CAMERAS

An array of a dozen or more cameras is assembled to make the scenes of a big picture

Courtesy Realart

FILMING ACTION IN CAB INSIDE A STUDIO

There are few settings an author can call for that the producer cannot provide. This shows how an episode was pictured in a photoplay made from the popular novel "In the Bishop's Carriage"

experts, "location scouts," cameramen and their assistants, contribute to the finished picture. When the film has gone through a series of laboratory processes, it comes back to the dramatic director to be "cut," that is, to be assembled in relation to the sequence of time and climactic effect. The director, with a man or woman cutter at his side, spends days in a projection room. The film is clipped and joined according to his instructions. The success of a picture may depend upon the skill of a director in cutting.

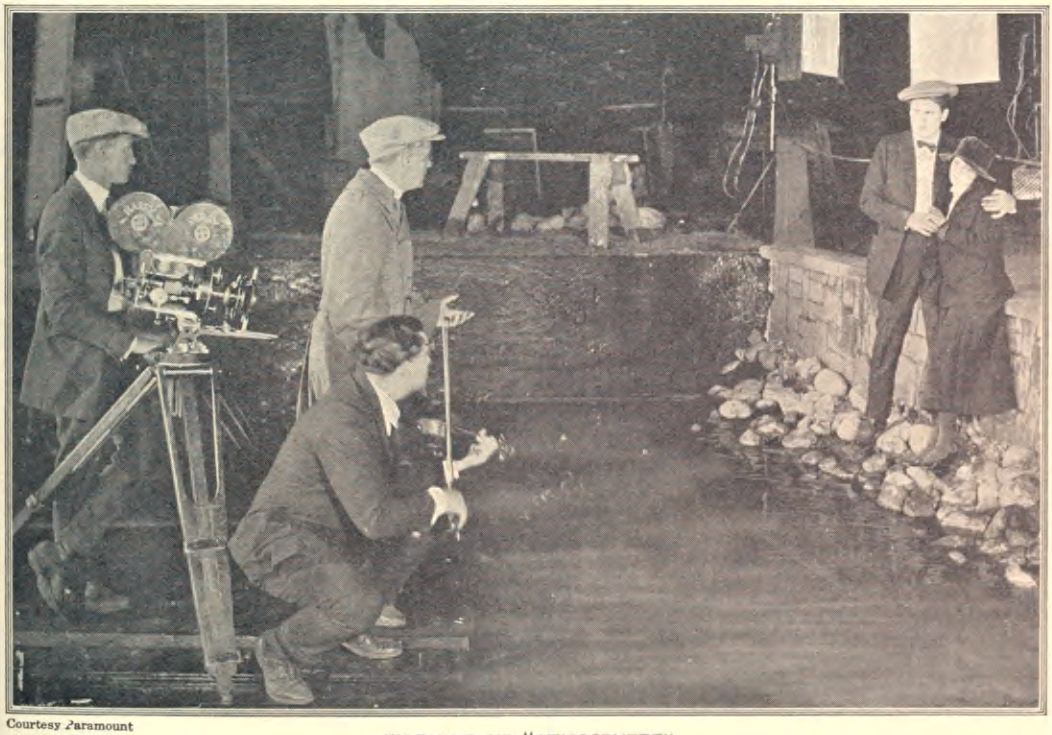
The highest standards of picture production now demand backgrounds, lighting and photography as expert as the acting and direction. With the help of powerful lights, the indoor studio can be flooded with rays stronger than sunlight and more easily regulated. Rain never interferes with the making of scenes under a studio roof. Every day is a sunny day where the Sun Arc burns. My studio at Orienta Point, Long Island Sound, has no outdoor stage. Even in California, directors are forsaking the sunlit stage for the studio equipped with the latest "Kliegs" and "Cooper-Hewitts." Exteriors are often built in the studio with better results than if made on the "lot" or "on location."

The world moves fast; and nothing in the world has moved so fast as the moving pictures. In a decade and a half they have advanced from an experiment to a tremendous industry. Half a billion dollars is spent in the United States every year in

making photodramas, comedies, educational films, animated cartoons, and news reels. Besides the investment in production, there is the cost of experiment in the machine work. We are still improving the supercamera that takes the motion picture snapshots, still trying to increase the speed of the lens, to shorten the focus, to perfect that important piece of mechanism, the tripod. The superiority of modern motion picture photography is due entirely to the short focus of the lens, which permits actors to move about the scene at will, without blurring the outlines.

Today, the director has many novel devices at his command—the "fade-in" and "fade-out," the "flash-back," the "close-up," "mist photography," the vignette, double exposure, the multiple print. Had I had the business discernment to patent certain of these effects, I would have realized more money than I could have earned in a hundred years by making pictures.

When I first photographed players at close range, my management and patrons decried a method that showed only the face of the story characters. Today the close-up is employed by nearly all directors to bring a picture audience to an intimate acquaintance with an actor's emotions. When, during the filming of "Birth of a Nation," I proposed making a "long shot" of a valley filled with soldiers, I met flat opposition from my staff. Until that time a screen army had numbered half a dozen uniformed



Courtesy Paramount

WORKING UP "ATMOSPHERE"

Music has been found valuable in making motion pictures. Here the director is explaining the scene he is about to photograph while a violinist supports his words with music that puts the actors into the spirit of the scene

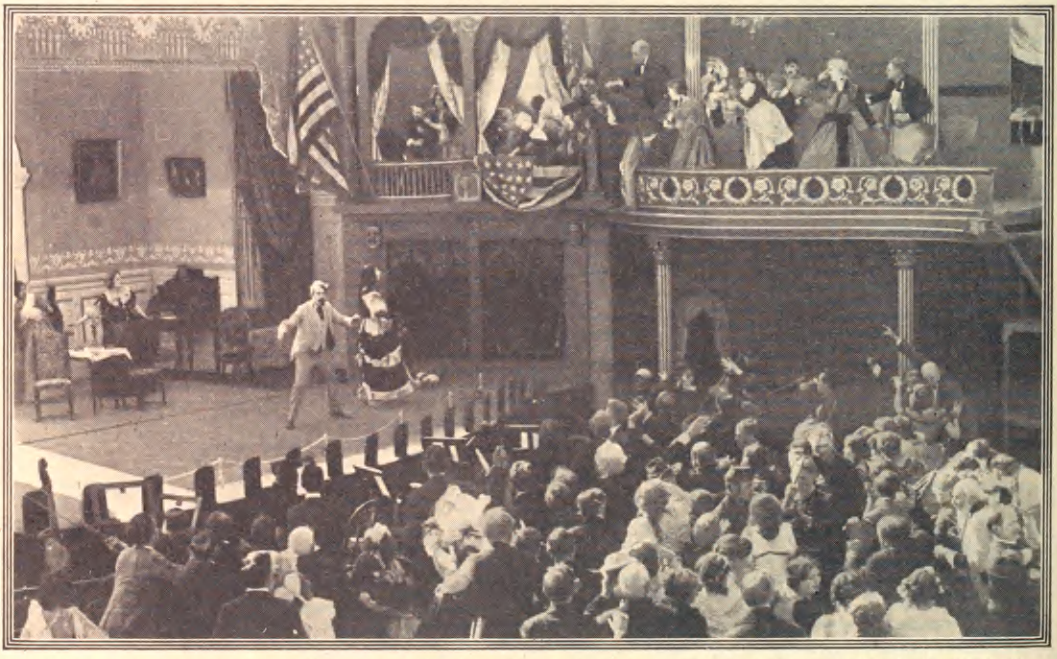
men. The rest of the forces were left to the imagination.

I adopted the "flash-back" to build up suspense, which till then had been a missing quantity in picture dramas. Instead of showing a continuous view of a girl floating down stream in a barrel, I cut into the film by flashing back to incidents that contributed to the scene and explained it. The photoplay of the present would be counted an arid thing without the diversion supplied by these now familiar aids.

Within late years a daylight screen has been perfected. The combination of the voice and the motion picture has long been an ideal of Mr. Edison and other inventors. I adapted parts of "Dream Street" to the use of improved "talking pictures." I believe there are great opportunities in the field of the phonograph-projector. Colored photography offers fascinating possibilities. By the use of processes recently patented, subdued natural colors are accurately registered, without the "jumping" that formerly marred the beauty of the tinted picture.

There is a big margin for improvement in the methods of distributing and exhibiting pictures. I hope the time will come when patrons will not be allowed to enter a theater except at the beginning of a photoplay—that the casual hospitality of the picture theater of today will not exist. The public will then regard the performance with the respect they now show for stage plays. This is one phase of the problem that engages us all—how to translate a manufacturing industry into an art, and meet the ideals of cultivated audiences.

For, paraphrasing Walt Whitman, "To have great motion pictures, we must have good audiences, too."



HISTORY REPEATS ITSELF ON THE SILVER SHEET—Assassinaton of President Lincoln, "Birth of a Nation"

IN AND ABOUT THE STUDIO

Courtesy Paramount

Some might call this picture "In Arcady"—but that would not explain why a famous novelist is shaking hands with a pleasant-faced man in a checked suit. Sir Gilbert Parker is congratulating the producer of his latest film story on its completion. The cast is also happy. Weeks of hard work have just come to an end under the blossoming boughs of California

THE AUTHOR AND MOTION PICTURES

By Rt. Hon. SIR GILBERT PARKER

I HAVE never been converted to approval of motion pictures. I believed in them from the first, and further acquaintance with the art—I use this word deliberately—has only deepened my faith. I know how bad so many of the pictures shown on the screen are, but the art is very young and progress made since the days of the "nickelodeons" is immense. To what is the progress due? Not alone to the manufacturers of motion-pictures, but also to the public. The public taste has developed and with its development has come a demand for better and better pictures.

Courtesy Paramount

SIR GILBERT PARKER

Author of "Pierre and his People," "Seats of the Mighty," "The Right of Way," and many other successful books and photoplays

It seemed to be thought at one time that the semi-nude and the slightly salacious were needed to draw the public, but that day is fast going. On the whole, the public taste is right. It may flirt with the suggestive on the stage, but in the end it is true to the best instincts of life. Consider how law and order are kept in big cities. It is not alone the administration and the police. It is the will of the community. The will of the community is in vast preponderance for the good things, and the stable and the right thing, else social life would be chaos and disorder would reign everywhere.

So with the films. At first the semi-nude and tights and suggestive scenes were attractive, but the success of the films free from all that is proof of the soundness of public taste. If you take the most successful films it will be found that they have naught of the salacious and the sensual, from "The Birth of a Nation" and "The Miracle Man" on; and many of the most successful, like "The Four Horsemen of the Apocalypse," end unhappily. Let me take one case in my own experience. "The Right of Way," a story which ends unhappily—in the conventional sense—was twice produced by the Metro organization. The first production was not a success with Faversham in it—not from any fault of Faversham—and the Metro produced it again. Without my knowledge they made two endings, that of the book and also a happy ending, and submitted them both to the trade. The trade decided on the ending of the book, and it is one of the most successful motion pictures of the last year as the box-office receipts show. Public taste can be trusted. Take "Madame X,"—is that a happy story? Does it end happily? No, yet it is abundantly prosperous.

I have from the first wondered why film producers did not make pictures of historical novels, where there were no royalties to authors to pay, and I was told the public

A CALIFORNIA PICTURE TOWN

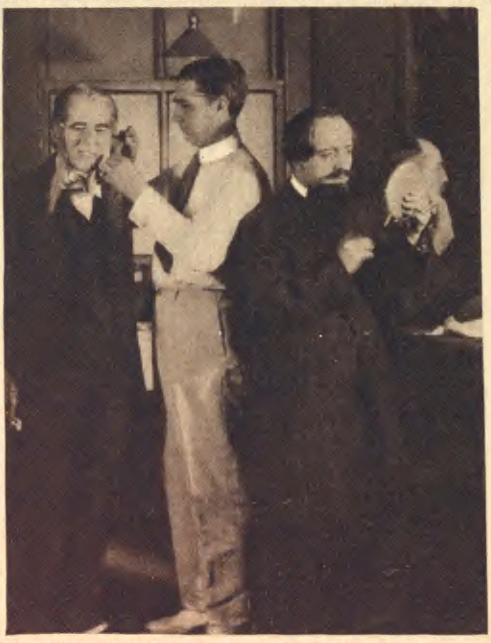
An airplane view of studios, dressing-rooms, and outdoor sets

Courtesy Goldwyn

A SCENE IN THE MAKING

A remarkably graphic picture of a studio "all set" for filming. It shows three separate rooms, and effectively demonstrates the fact that "Lights" and "Camera" are as important as "Action" in motion-picture making. The scene is from one of Booth Tarkington's "Edgar" comedies

would not patronize them. My reply was that the public did not have a good chance to judge, for the historic motion pictures had not yet a fair chance. I was told to see the fate of "Joan the Woman." Well, I saw "Joan the Woman" and a very fine film it was, but its failure, or rather partial success, was due to other causes than its historical nature, as the world knows. Now, at last, the success of "The Mark of Zorro," "Passion" and "Deception" have turned the views of the trade, and "The Three Musketeers" is produced with the help of Edward Knoblock, an authority on the history and costumes and customs of that period. The trade will produce historical romances again, and many of them will be failures, because to wear effectively historical costumes without self-consciousness requires the training that Shakespearian dramas give, and there are not very many in the film world that have had that training. I am glad the film producers have been convinced, but I hope the inevitable failures will not turn them antagonistic once more.



From "Behind the Motion Picture Screen," by A. C. Lescarbours

THE MAKE-UP MAN

Indoor make-up technic varies greatly from that of the stage drama, because of the effect of the studio lights

For myself I have always believed that every important author in the world will want to write for the film stage in good time; and that time is at hand. To say naught of eminent authors in the United States, in England Pinero, Arnold Bennett, Robert Hichens, Edward Knoblock, Somerset Maugham, Elinor Glyn, and even Kipling, are writing for the screen, and my prophecy is fast coming true. Henry Arthur Jones is now in America making scenarios for Paramount; Sir James Barrie, whose "Sentimental Tommie" and "Admirable Crichton" have already found their way to the screen, is to assist at the American production of "Peter Pan."

Film writing is not an easy art to learn, but it must be learned by authors themselves, or their books will be butchered as they have been in the past, and no one to say them nay.

One of the worst features of the film business today is the titling. How few films have good titles, and yet a title may be as important as a scene, even more so. Titling in itself is bad in one way, for it distracts the attention from the picture, but it can never be abandoned, I fear, though there is a film on now, James Whitcomb Riley's "The Old Swimmin' Hole," with no titles; but this story is an extremely primitive one and titles are not needed in it.

Finally, let me say I do not think the film will destroy the taste for the stage. It will make new lovers of the stage as the music hall has done, and though for the present the theater galleries throughout this country have been badly affected, I believe it is because people can see a film from the gallery at one-third or one-half the cost of a gallery seat in a theater, that the theaters have been injured in that portion of the house. The film goes where there never was a theater and helps create dramatic taste. How many churches are there throughout the country where films are shown? About a stone's throw from where I write this article is a church where last Sunday night a film was shown called "Our Country As It Is." Time will come when every school and every church will have a moving picture equipment.

Governments distribute films to schools and organizations. Universities and schools are using the screen picture to teach history, literature, geography, science. Explorers are bringing back graphic reports recorded in celluloid. The world is better taught, better informed, thanks to the motion picture.

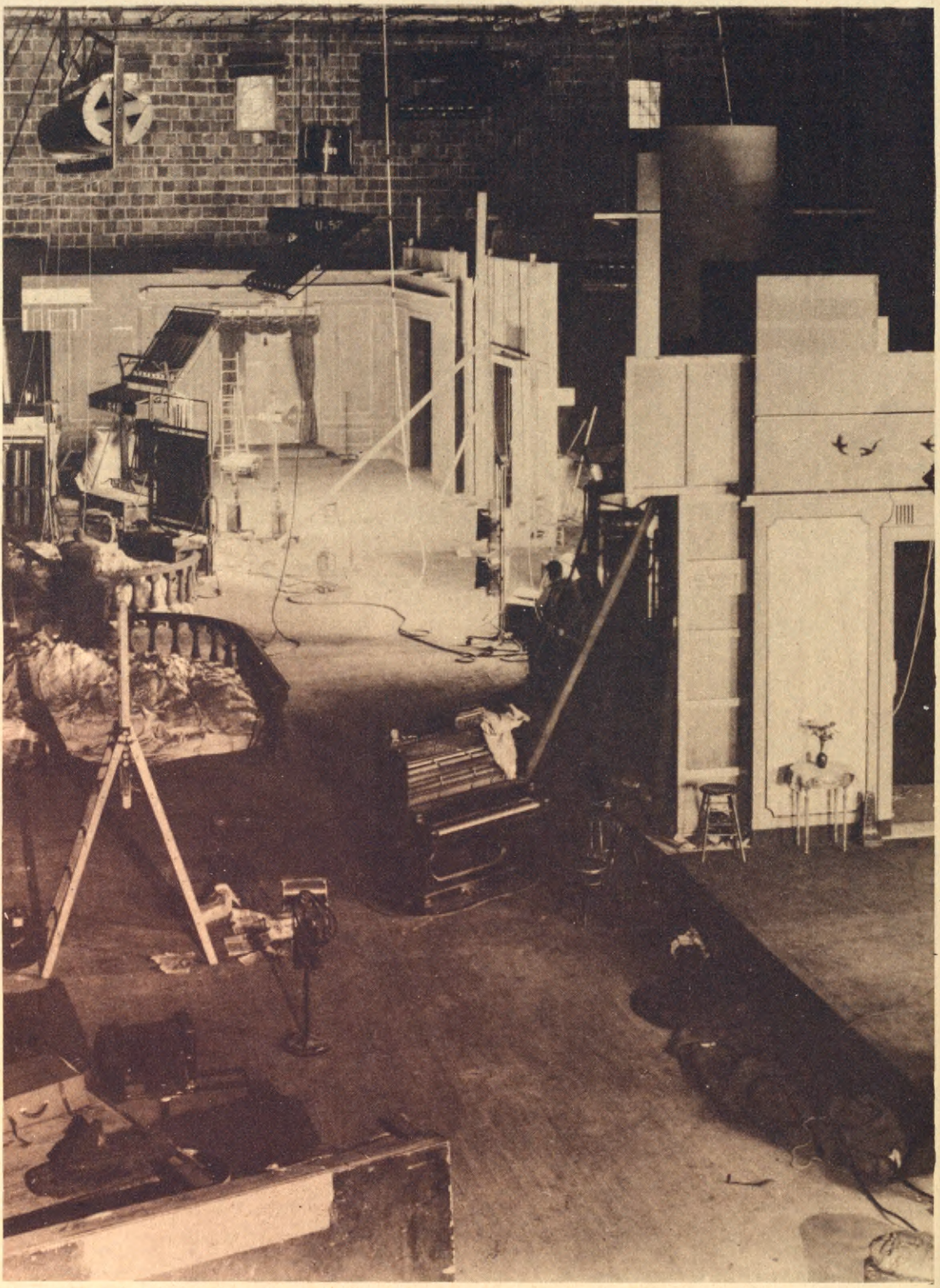
Courtesy Realart

WHEN A WEDDING SCENE IS MADE

A minister is frequently called in to consult with the director. One is here shown instructing a bride and her attendants in ceremonial details

A BABY "EXTRA"

Entertained by a film hero while her play mother discusses the script with the anxious director

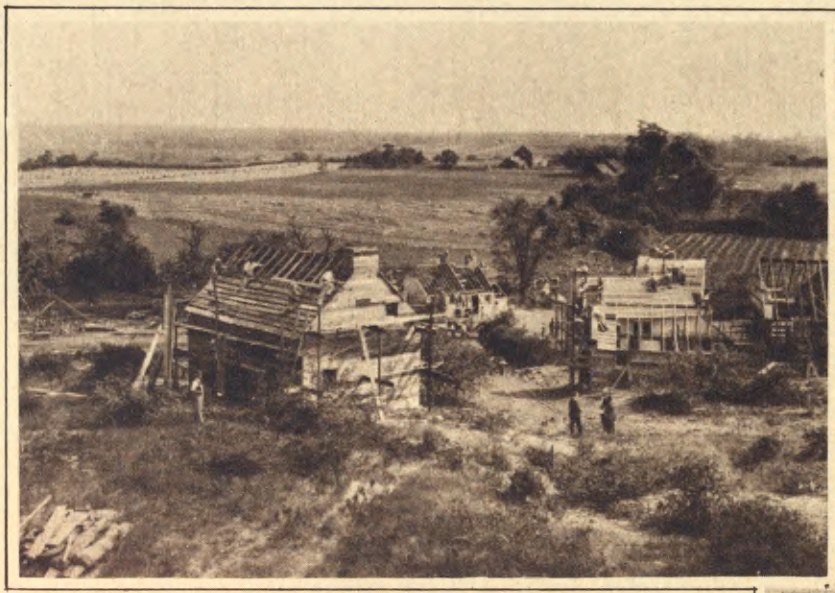


Courtesy Griffith

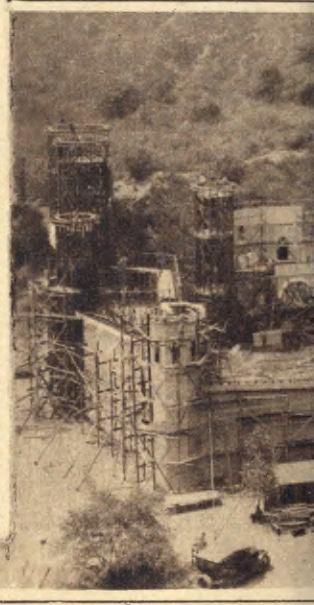
A "MOVIE" WORKSHOP

On the floor are several indoor sets and an exterior. Above the front yard of an old-fashion city house is a cylindrical machine that supplies snow storms on order

A BALLROOM SCENE IN "WAY DOWN EAST"
D. W. Griffith directing

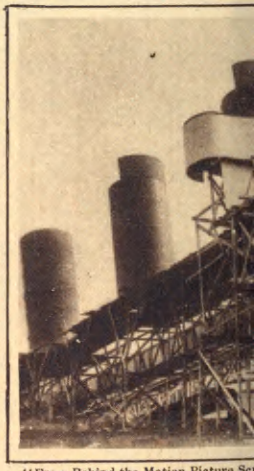


Barrie's village of Thrums was recreated near Elmhurst, Long Island, for the film play based on the Scotch author's books about "Sentimental Tommy," recently released The director's parents, who had lived near Kirriemuir (the original of Thrums), pronounced this a perfect facsimile of the illustrious village across the sea (Below)



Courtesy Fox

King Arthur's Castle at Ca
Table Knights were reprodu
Twain's "Connecticut Ya

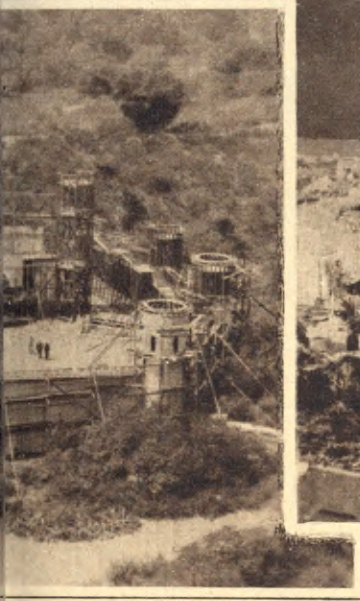


"From Behind the Motion Picture Sc

In a picture play that feat
Lusitania, the upper part o
copied in

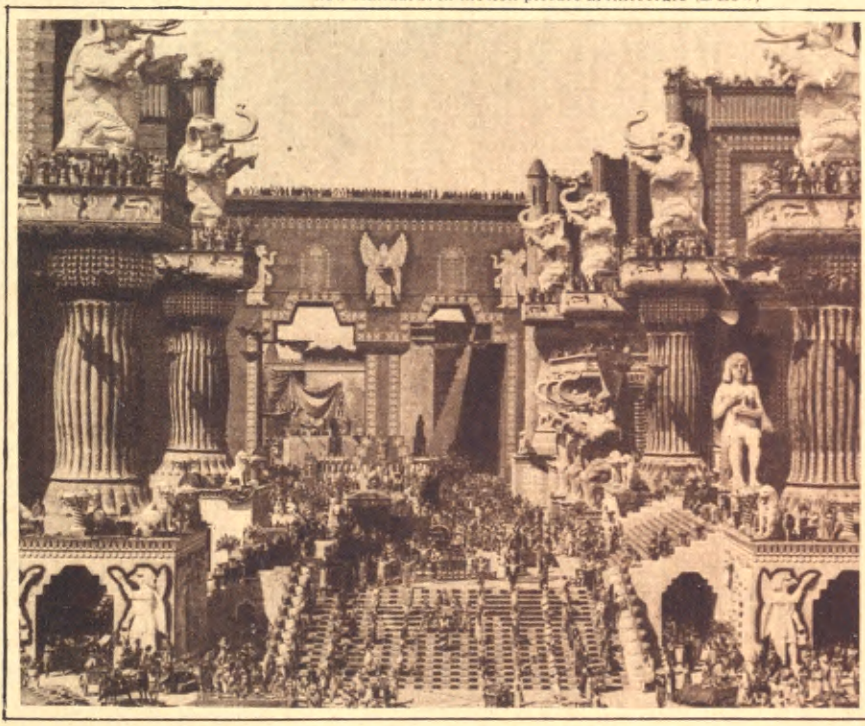
IN THE LAND O

Landscapes are changed and historic buildings reconstructed. Scotch Thru
among the brown hills of California. Gigantic walls



This is a model city, just half as high as an electric fan. (Look over to the right and you will see the fan.) On the screen the buildings were made to appear full size

This gorgeous "set," erected for the Griffith spectacle, "Intolerance," established new standards in motion picture architecture (Below)



d the Halls of the Round
he film version of Mark
King Arthur's Court"

Scitific American Pub. Co.

haunting tragedy of the
fied ship was realistically
plaster

MAKE-BELIEVE

omes to life on the meadows of Long Island; King Arthur's towers rise
ae a towering background for a Babylonian pageant

THE SCENIC BACKGROUND

By HUGO BALLIN, Artist and Director

DURING the past few years motion picture producers have given the subject of sets and settings their serious consideration. They have employed men skilled in architecture, in effects of light and shade, in the disposition of masses of color and in suitability. The producer now realizes the value of color—the simplified background—the balance of wall and window space. Today the actor's work is less difficult to follow. His skill is not confused by screaming designs, by inappropriate and misapplied ornateness.

Early motion pictures represented what the man that dressed the set considered refined luxury, and what the dramatic director was willing to accept as background. The average director still has a powerful fancy for flamboyant walls and furnishings; some have been converted from this grotesque sort of decoration. We have progressed, but still have before us a lengthy course. The development of beauty travels a snail's pace.

Courtesy Bray

THOUSANDS OF DRAWINGS

Must be made for an animated cartoon of average length. Cartoonists, animators, camera boys labor 30 days to produce a film that can be shown in 10 minutes. In the illustration we see the overhead camera trained on the frame that holds sheets of drawings arranged in scenes. The pressure of a foot pedal exposes the lens. This operation is repeated until all the sheets are photographed, and the film is ready for the projector

The producer is rapidly learning that a good story is materially aided by good backgrounds and light effects. The public has grown to understand composition, it knows better sets, it supports better stories. The public may not be able to analyze the why and wherefore, but the old form of decoration is peeling from the canvas and disintegrating. A setting is of little service to the drama if the drama does not dominate. The action is paramount, but can be so only if the background is not obtrusive.

Perfect sets have never made a drama. The audience follows story. The story can be explained by settings. Settings are dramatic rhetoric. They should be indicative of breeding. When settings receive uncommon notice the drama is defective. When they are not noticed they are badly thought out. Settings are the photographer's hope. A good setting helps reduce the number of subtitles—the aim of all idealistic directors. A good background often elevates the achievement of the player. A bad setting has never elevated anything. A good set can be spoiled by bad lighting—a bad set can be saved by good lighting. Lighting is motion picture composition. "Shaft lighting" gives a semblance of parallax (an apparent displacement of an object due to an observer's position). A motion picture has no parallax. The apparent shifting of an object, or the ability to see around an object, is caused by double sight, or the vision of two eyes.

A lens represents one eye, it may be the right or the left. Therefore it is important in sets to get *depth*, not width. The depth of a motion picture is infinite, its width is finite,—it has limits. An audience knows two reactions in relation to a set—it is pleasing or it is not.

A man does not readily believe in a thing he does not see or know. There is no greater mission for the art director than to concoct a picture that bears the semblance of composite truth. Motion pictures must tell the truth to be convincing.

Beauty affects us by association. Sometimes when the association is forgotten the memory of beauty remains. The impress of great beauty is an expurgated memory of things we have enjoyed. True art is simple—simple beauty. Most motion picture

Courtesy Goldwyn

AN ANTIQUE ITALIAN ROOM

Reproduced by an artist-director who believes that truth is beauty, and follows his creed

Courtesy Pathe

KIPLING'S STORIES HAVE REACHED THE SCREEN

The sets for "Without Benefit of Clergy," the first of Kipling's short story classics to be filmed, were designed according to the author's own suggestions

backgrounds are not simple. The average picture suffers from a superabundance of complications, and this applies to both sets and acting.

When an audience realizes that a background is artificial,—has been constructed for the play, the production suffers. As long as a set suggests the studio it fails in its mission.

The prime mission of the screen is to entertain. The most astute of latter-day producers recognize the commercial worth of taste and judgment, an understanding of proportions, of rhythm and *tempo*, of the finer values of drama, of good acting, design and composition.

It is vital to make beauty clear, and more important to make it affect the imagination. It is this latter development that artists and directors look for, but we cannot venture too far on this ground until we know that the public, the ultimate arbiter of our destinies, gives us unstinted approval and applause.

Courtesy Lasky

A STUDIO CARPENTER SHOP

Equipped to build anything from chariots to churches

From "Behind the Motion Picture Screen," Scientific American Pub. Co.

A STUDIO PROPERTY ROOM

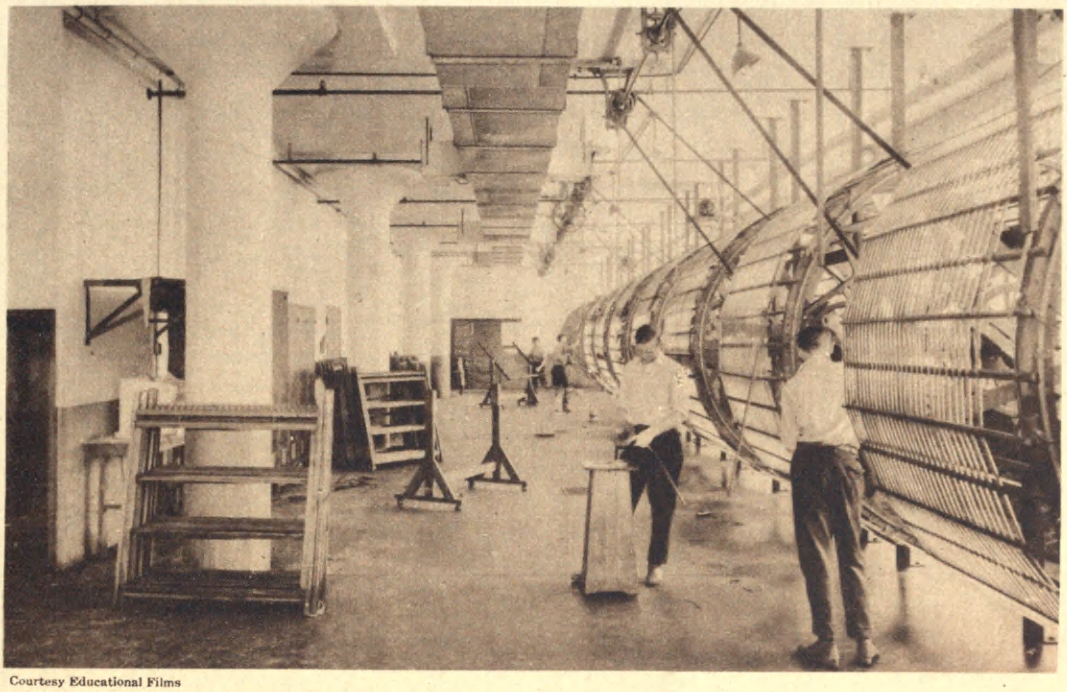
A fascinating department to be found in moving picture establishments

DESIGNING AND PRINTING TITLES

This work engages the talent of experienced artists

A STUDIO WITHIN A STUDIO

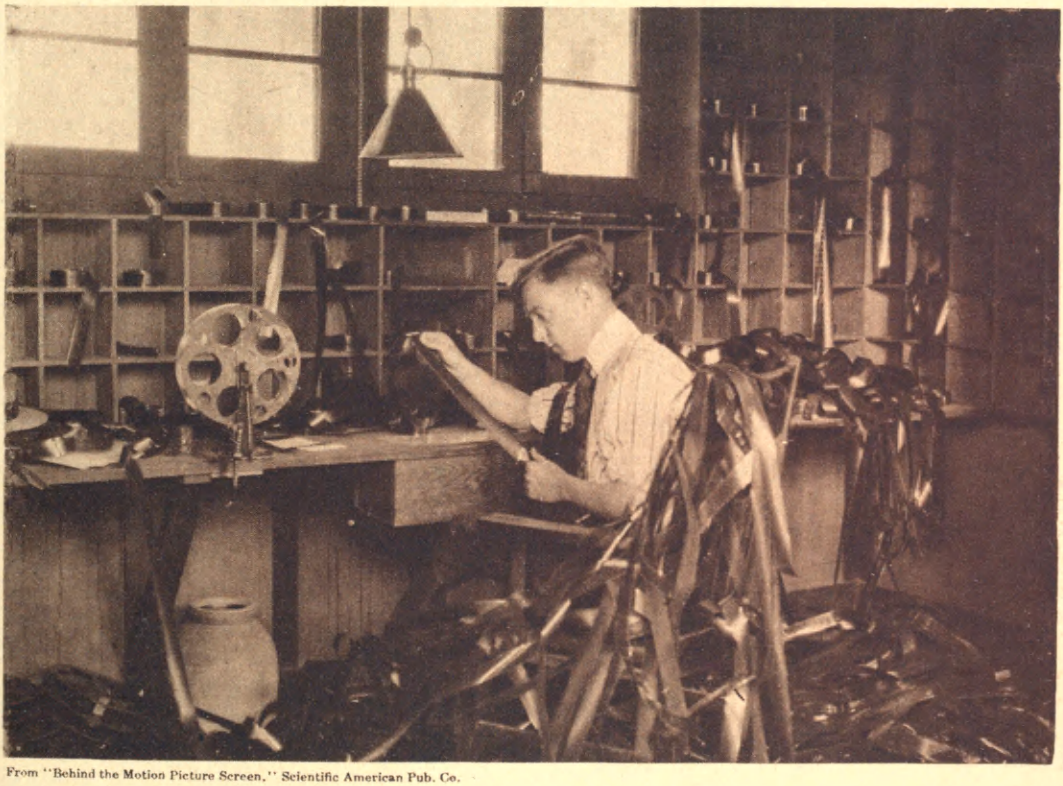
Trained sculptors and castmen make to order whatever is required by the art director



Courtesy Educational Films

DRYING THE NEGATIVE

The film is wound on revolving drums when it comes from the developing room



From "Behind the Motion Picture Screen," Scientific American Pub. Co.

IN THE CUTTING ROOM

Miles of printed celluloid ribbons are handled in assembling a complete picture. Sometimes a "cutter" becomes so expert in arranging scenes that his director leaves most of the job to him

Courtesy Goldwyn

SCENERY THAT ACTS

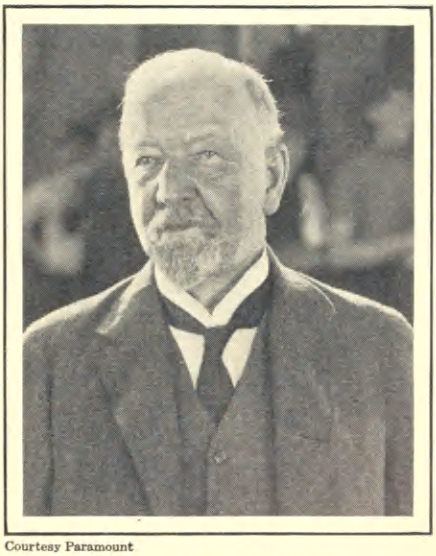
The scenes made for "The Cabinet of Dr. Caligari" are the latest word in moving picture background. They picture the hallucination of an unbalanced mind. The story of the drama is told by an inmate of an asylum who believes the leading physician of the asylum to be the reincarnation of an evil Dr. Caligari who lived in the twelfth century, and who traveled about the country with a somnambulist whom he exhibited at fairs. The doctor, according to the inmate's story, rejoiced in making the somnambulist commit crimes, and the inmate believes himself to be the hero who will convict the evil Caligari. The scenes form a series of remarkable "futurist" compositions. Streets curve crazily, lantern posts lean in wide angles over stone walls; and doors and halls achieve the uncanny spirit of the story by being mere oblique lines or a disconnected series of curves. Long triangles of splotched color stretch upward to form a striped, hollow pyramid; draperies hanging in a festoon, like a huge blanket, sag with the weighted impressions of falling skies, of imminent catastrophe, of doom. The weird background has been called "scenery that acts"

DRAMATIST AND THE PHOTOPLAY

By HENRY ARTHUR JONES

Author of "The Silver King," "Saints and Sinners," "Middleman," "Mrs. Dane's Defence," etc.

THE dramatist wins enduring renown by his dialogue, and by his dialogue alone. To write a successful play he must of course have other gifts and acquirements. He must call in the scene-painter, the upholsterer, the costumer, the electrician, and other adjutants to help him to express himself. But his dialogue alone has permanent value; all the rest of his trappings are perishable. The difference between "Macbeth" or "Hamlet" and a stock melodrama is that "Macbeth" and "Hamlet" can be read and studied as literature. That is the reason they have held their place in our theater for three hundred years. That is also the chief reason why they often fail on our modern stage. They are literature. They demand serious thought and feeling from an audience. They ask for examination, and offer emotional and intellectual enjoyment on these grounds.



Courtesy Paramount

HENRY ARTHUR JONES

It is clear that the film cannot afford the quality and kind of pleasure that spoken drama can give—the pleasure of literature.

Again, the voice has always been the chief gift of the actor, his chief means of swaying his audience and stirring their emotions. It is mainly by the voice that the actor gets his finest and worthiest effects. What the dramatist has written falls dead upon the stage unless it is vitalized by the actor.

It is clear that, as the film play forbids the dramatist to use his chief and highest means of expression, so also it forbids the actor to use his chief and highest means of expression.

What balancing advantages and compensations has the film to offer to the actor and the dramatist? To the film actor and actress it offers universal, though not immortal, fame, by displaying their pictures in every city of the civilized world, perhaps in five hundred theaters on the same night. It further offers to star performers an enormous salary.

What are the advantages offered the dramatist? In the volume, variety, and impetus of its action—that is, in the very essence of drama—in its swift, vivid, multiple transformations, its startling command of contrasts, its power of concentration on valuable minutiae, its capacity for insinuation and flashing suggestion—in all these truly dramatic qualities the film play offers to the dramatist an infinitude of opportunity compared with the spoken drama.

Aristotle compared the limitations of the drama with the expanses of the epic. But, compared with the film, even the epic, the novel, becomes a tedious chronicler of events.

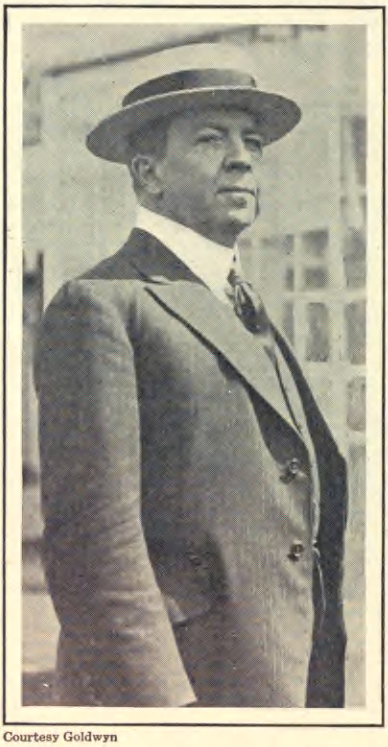
The film is a bungler at comedy, except of the rude and boisterous kind which Thalia reproves. But the film invites and welcomes Romance and Imagination and opens a large field for their exploits. Now, imagination, from Shakespeare downwards, is largely shut out from our modern stage, with its pert vulgarity and dictionary of slang. Tongue-tied already, and almost banished from the spoken drama, imagination may perhaps find a home in the film theater. She will be deprived of speech, but how rarely she is allowed to open her lips upon the regular stage! May not Imagination find utterance in the vast pictorial resources and devices of the film theater, throw her magic beams amongst its fascinating lights and shadows, and employ the quick vibrations and successions of the screen to tell larger stories of human life than are being told today upon the stage of the spoken drama.

FICTION WRITERS AND SCENARIOS

By RUPERT HUGHES

Dramatist, Novelist, and Short-story Writer

"PICTURES" have had good stories for a long time. What pictures have failed to do is to advance with their audiences. When pictures were first thrown upon a screen it was a very wonderful thing to see a man walk, or stretch out his arm, or smile. Later it was even more wonderful to see a train wrecked or a house burned or a maiden rescued. But now all those things are no longer novelties. The smallest boy sees nothing remarkable in the mere action of pictures; he no longer thrills over the wreckage of locomotives, for he knows every little trick of the trade. He can tell you the very instant that a dummy is substituted for the actor in an accident.



Courtesy Goldwyn

RUPERT HUGHES

The mere mechanics of the movies have lost their thrill because their novelty is gone. The one thing to do, then, is to sound the audience, and the only way to reach it is with sincerity. That is the crying need of pictures now. They must appeal to the audience as real. Their grief must be sincere, their humor genuine. Depict real life for people, as the best play and novel does, and the photoplay will hold its own.

As a rule, story-tellers know their business; that is why they are successful. And yet it is a fact that film companies pay thousands of dollars for some story by a well-known author and, when it has gone through the scenario editor's hands, the author could not recognize his own story. Nothing is left but the title and the author's name, and the main reason is, that it is a scenario editor's religion that a story-teller can never write anything wholly suited to the screen. The scenario writer makes no effort to understand the theme of the original story, but thrusts it through the conventional actions.

For this, authors have stormed against the motion pictures, and you can't blame them. The picture producers bought their stories, and then threw away the plots, and, substituting ideas of their own, merely kept the titles, sometimes, and a few of the characters.

I have not blamed the motion pictures so severely for this as some have. I realized that they were going through a phase in their evolution. The same conditions prevailed at one time on the stage and in the publishing business. The author got little credit, and his work was distorted to suit the fancy of producers and publishers. Now some of us have agreements whereby not a word of our writings is to be changed. And we help select the casts and attend rehearsals of our plays.

We work in somewhat the same way with the picture producers. We work with the "continuity writer," with the casting director, with the director and with the film editor.

If the moving pictures are to hold the people, novelty must be introduced, and the place to do this is in the scenario end of the business. The person that shapes the mold should know his audience, should be conscious of his audience, should know the precise method of wringing tears or laughs from them. And if an author's works are good enough to purchase, they deserve to be presented with the background of the theme that the author evolved.

We must strike at the hearts of the audience, bring sincerity into pictures—then they will maintain their place as one of the arts.

THE AUTHOR AND THE FILM

By REX BEACH

Author of "The Spoilers," "The Silver Horde," "The Barrier," "The Iron Trail" etc.

THE public is beginning to pay more attention to motion pictures and to treat them seriously. There is a new attitude developing all over the country that is very significant, especially in regard to well-known authors in pictures.

Producers have been pricked into activity by new enterprises that have engaged the services of established writers—writers of books that make picture material of wide appeal and range of interest—writers whose names frequently appear in the best American and English periodicals.

These authors are writing on themes vital to the people—on things of present and immediate interest. Their picture plays claim the attention won by the publication of their novels first in magazines and then in the best selling books.

Only a few years ago the gap between the American author and the photoplay was so wide that a combination of the two in the producing field seemed a distant vision. Within the last year, the author's name as a valuable asset to the motion picture has become as great as that of the actor-star.

Courtesy Goldwyn

REX BEACH

Changes occur with lightning rapidity in the photoplay world, but the causes at the basis of this change are too fundamental to be attributed merely to the passing whim of the producer. The public is, after all, the dictator of films. The public has learned, or rather, the public has been taught that the author is just as important to the photoplay as versatile star, lavish settings and exquisite photography.

A few years ago, neither the author nor the producer realized their potential values to each other. The motion picture, sound as its future seemed, was still in the experimental stage. The author, in most cases, was unwilling to acknowledge that the new popular medium was worthy of attention. The photoplay, on the other hand, suffered from the absence of the guiding hand of the experienced fabricator of plots. It was in danger of becoming merely the agency for the exploitation of the personal screen success.

The rapidity with which both factors have acknowledged their need of each other attests to the prophecy that in the future literature will find itself expressed through the screen as well as through the printed page. Certain stories, of course, are not fitted for photoplay reproduction because they depend more upon psychological motives for their development.

The direct cooperation of author and producer—joins the trained hand of the author to that of the director on the throttle at the producing end. It results in the coordination of all the details of production by the man who created the plot, the characters and the setting.

There is something to be said for the author who disdained the photoplay heretofore, who was forced to witness the mutilation of his story into an unrecognizable caricature. Each side has now made concessions. Each realizes the indispensability of the other. Each has noted with approval the growing demand for the good story, the well-thought-out plot, characters drawn from life rather than from the stilted lay-figures of the studio. The author is now contesting with the star for supremacy. His own laurels, the many photoplays created from well-known novels in recent months, are proof of his value to the newest and most popular art.

THE CAMERA AS A REPORTER

By HERBERT E. HANCOCK

Director-General of News Film

TWO hundred years ago there were three Estates, the Clergy, the Nobility, and the rest of us. Then Edmund Burke, the great British statesman, found a Fourth in the Press Gallery of the House of Commons. If he were alive today he would create a Fifth Estate, and would designate screen reporters as its members.

The worn-out saying, absolutely incorrect, that "The Motion Picture industry is in its infancy," can be applied with more truth to the News Reel which, however, is rapidly approaching a state of adolescence. The wrong-doer of today dreads the searching lens of the camera even more than the vitriolic pencil point of the reporter, while the hero and the publicity seeker vigorously dust off the "Welcome" on the door-mat at the approach of both.

Publishers' Photo Service

FILMING A FLIGHT

The News Reel cameramen of today are few in numbers. There are not more than two thousand in the United States and Canada. It takes a man of unique type to become enough of a cameraman to make a good living. A News Reel producer employs very few cameramen on salary. Only in the big cities does he have to keep them on salary. The others are free-lance operators, known to the craft as "field men." These men get paid for the film that is accepted by the News Reel editor. If it is rejected, the film is a dead loss to them.

There is no harder line of work in the world than that of a News Reel cameraman. Unlike the reporter who carries with him a few scraps of paper and a pencil, the cameraman lugs an outfit weighing anywhere from 30 to 60 pounds which, in many cases, has to be set up, threaded, and focused with lightning speed. He must understand photography down to the 'nth degree. He must be somewhat of a director. He must be able to read the mind of his editor to a certain extent so as to get the most interesting news angles possible. And he must be essentially a diplomat. Also, when the occasion arises, he must take his life in his hands. A man that has earned the degree, "First-Class," is not only a good photographer, but a *man* all the way through.

At first thought it appears amazing that so many strive for this position in life, with such a hard road ahead to travel. The reason is that News Reel work demands the creation of something. A man is put upon his mettle, and a real man likes that. Perhaps the most alluring part of it all, however, is the power that his work gives him. The news camera is a powerful weapon to be used for either right or wrong. Whereas a newspaper lives for not more than forty-eight hours, a News Reel's life is reckoned at about ninety days. Thousands of eyes see the newspaper article; millions of eyes see the current events picture on the screen.

Frequently, as in my own case, the director of a screen weekly is an ex-newspaper man. He must know, above all, what kind of news will appeal to the multitude. He assigns his local staff to cover events just as an editor does.

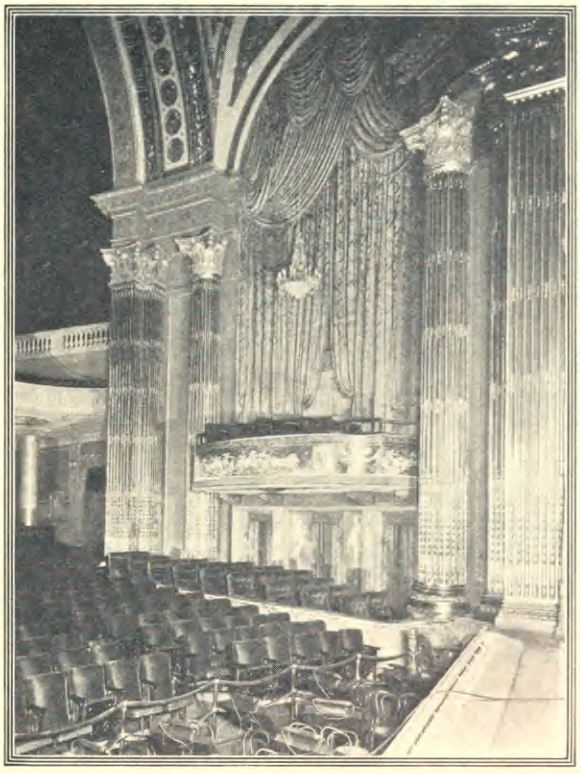
I prophesy that within a few years the News Reel will dominate the field as the public megaphone. The day will come when it will speak with the voice of the nation. As soon as its power is understood, it will be recognized as the most potent representative of the Motion Picture industry.

MAKING THE PROGRAM

By S. L. ROTHAFEL

Creator of the Motion Picture Program de Luxe

NOT so many years ago, fifteen to be exact, I was running a little movie show behind a barroom in a mining town in Pennsylvania. It was a one-man show. I painted my own displays, ran the projection machine, and sometimes walked miles to the nearest exchange to get the pictures. Even then, I had confidence in the entertainment value of the motion picture—as much, I think, as I have in my present capacity as director of productions at the world's largest theater—not only the largest one consecrated to the Motion Picture muse, but the largest devoted to any theatrical enterprise.



A PICTURE THEATER OF TODAY

The interior of the largest theater in the world, the Capitol, New York City. It is devoted exclusively to the photoplay, a far reach from the nickleodeon of a few years ago

In the West, I tried out my ideas for the making of a new sort of program, and met with encouraging success. Later, in New York, I presented a motion picture with appropriate music, harmonious lighting effects, and other features designed to please the senses. Finally a formula for program-making was worked out that covered the field of music, general news topics, drama, comedy, education, dancing, and architectural effects. The American is appreciative of the beautiful, but he is impatient, and will not sit through a long, tedious performance. He wants his entertainment well done, but quickly done. The type of performance that suits him and attracts him is marked by rapidity and diversion.

If someone had predicted a dozen years ago that an orchestra, a chorus, soloists of international reputation, scenic artists, and a large mechanical staff would one day be part of the organization of a "movie" house, the prophet would have been called an irresponsible visionary. As a matter of fact, he was! And yet this very thing has come to pass. When, in 1914, the first theater was erected in New York under my supervision, for the purpose of presenting the moving picture in a modern, aesthetic setting, there were dire predictions of failure. A great structure splendidly decorated and equipped for the showing of motion pictures. Rash and impractical! The idea and ideal of a dreamer!

The Capitol Theater, New York, has 5300 seats. Its grand orchestra numbers eighty musicians. There is a chorus and a ballet. When we presented the master photoplay, "Passion," 175,000 came to see it during the two-weeks' run.

Producers spend millions to stir the jaded patron. A production into which dollars have been poured like water does not necessarily yield the big story, the continental success. When truth, humanness and good taste replace unreasonable extravagance, the moving picture becomes an unparalleled medium for the promotion of culture, education, and the highest form of beauty.

"FILMS BEAT BOOKS," SAYS EDISON

TEN years ago Thomas Edison taught a group of children science by using motion pictures. The results were so convincing that he expressed himself as "on fire to spread this means of education broadcast."

"The royal road to learning lies along the film highway," says a college professor. In New York alone, more than one hundred schools now use educational films. In every twentieth school in the United States there is a projection machine.

Children who learn by means of motion pictures visualize dots on the map as hives buzzing with life and industry. History is reconstructed on the screen. Bygone days are lived over again; Joan of Arc, George Washington, Betsy Ross, Napoleon, become real figures of romance and action. Children learn through the eye without conscious effort. Dry-as-dust descriptions are replaced with unforgettable *living* pictures. They see the wheel of a Chinese potter shape a mass of clay into a beautiful vase; before their eyes a mushroom breaks through the ground and the beaver builds his dam.

A recent list compiled by the Society for Visual Education offers schoolfilms on a variety of subjects. Early French explorations in North America are traced by animated lines moving upon the map of Canada and the United States, and scenic pictures show the country the explorers traversed. A subtle lesson in Americanism is taught in the film, "A Citizen and His Government," which shows how the American Government furthers education and protects life, health and property. One of the recent activities of the Government is the distribution of educational films to schools that have motion picture equipment.

In the course of an experiment recently conducted in an Illinois school, several classes were shown the life history of the Monarch butterfly on the screen. It was proven that a better understanding of the life of this butterfly was gained from a fifteen-minute film exhibition than from two weeks of textbook study that had been given to another species.

In North Carolina the Bureau of Community Service, a State organization designed to improve social and educational conditions, sends out "movie trucks," equipped with motion picture projectors and light plants, over circuits selected for their accessibility to the largest number of people.

Films stimulate interest in the collections of museums, and cultivate the taste of the people in travel, crafts, arts, archaeology and the history of races. During the past year seventy thousand children saw the moving pictures given in the auditorium of the Toledo, Ohio, museum.

Manufacturers use films to demonstrate factory and distribution methods to workers, salesmen and investors. A certain breeder of livestock had a thousand-foot reel made of his herd. He bought a "suitcase projector," took it to the office of prospective buyers, attached the plug to a light socket, pulled down the shades, exhibited the pictures of his stock on the wall —and made six sales out of seven prospects.

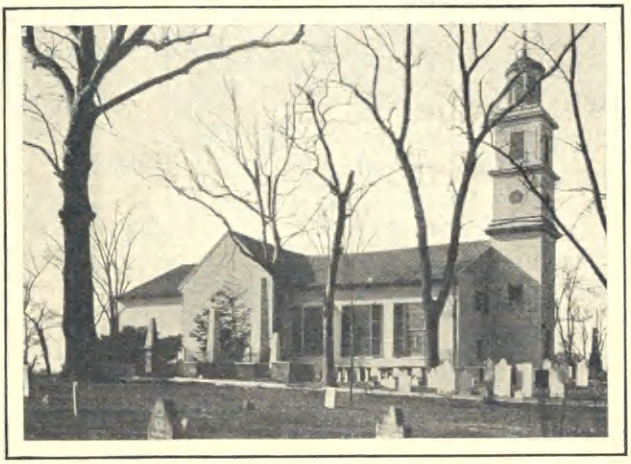
Miles of film are used every summer by the Nebraska Department of Conservation and Soil Survey to report farming conditions.

A Japanese proverb says: "Once seeing is better than a hundred times telling about." We can teach almost anything with moving pictures. — *Prepared for The Mentor by the Society for Visual Education.*

Courtesy Pathescope Co.

SEEING THE LESSON

"GIVE ME LIBERTY OR DEATH!"



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WHERE PATRICK HENRY SAID IT

IN American annals no political speech, unless it be Webster's Reply to Hayne, ever made more stir or won more fame than did Patrick Henry's appeal of 1775. "... Give me liberty, or give me death!"—this much we often quote; but what more do we remember? And where were these words uttered? Before the Continental Congress in Philadelphia? No: it was before a Virginia convention in Richmond. Was the convention held in the capitol on Shockoe Hill? No, for the capitol was not begun until 1785; it was based on plans that Jefferson supplied of a rarely beautiful Roman temple.

If you are a visitor in Richmond, you may readily learn the answer. At Broad and Twenty-fifth streets stands St. John's Episcopal Church—"Old St. John's," natives call it. It is within comfortable walking distance from the heart of the town. In Old St. John's flamed up the ardor of Patrick Henry's patriot soul. The pew from which he spoke that day is marked by a white memorial tablet.

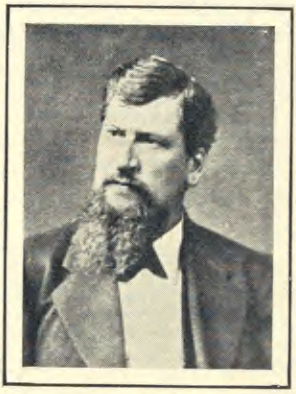
The church dates from 1740, and was therefore once a mission of the Church of England and within the jurisdiction of the Bishop of London. In every respect it was a strange setting for what has been called Patrick Henry's individual declaration of war. The old building has in later years been enlarged, but the spacious churchyard, with its noble trees and many archaic gravestones, preserves something of its ancient mien.

Hither, in that distant March, came the delegates to the convention. Not a few of the more prominent were, by tradition and temperament, conservatives: such were Edmund Pendleton, and Col. Richard Bland, and Col. Benjamin Harrison of Berkeley. The Boston Tea-party had been held more than a year before; Parliament had closed Boston Port; the first Continental Congress had met; it was less than a month before the events of Lexington and Concord. Yet these Virginians were not inclined to speak of war as inevitable—which is not surprising, for until March 28, 1775, no public man in America had openly spoken of war as inevitable.

On March 23, Patrick Henry presented to the Convention a set of resolutions for the arming of the Virginia militia and the placing of the colony in "a posture of defense." On the 28th, he supported them, boldly crying out: . . . "We must fight! I repeat it, sir, we must fight! An appeal to arms and to the God of Hosts is all that is left us!" A clergyman who heard that speech told afterward of the fire that burned in the plain young lawyer's eye, of the tones that thrilled in his voice. From a calm beginning his utterance grew in intensity and fulness. In his earnestness, the tendons of his neck stood out like whipcords. Men leaned forward in their seats to hear him, their faces strained and pale with emotion.

Then burst forth that tremendous peroration: "Why stand we here idle? What is it that the gentlemen wish? What would they have? Is life so dear, or peace so sweet, as to be purchased at the price of chains and slavery? Forbid it, Almighty God! I know not what course others may take; but as for me, give me liberty, or give me death!" The resolutions were passed. The trumpet-call of the Revolution had been sounded—there in Old St. John's.—*George S. Bryan.*

A PICTURE THAT STIRRED A NATION



A. M. WILLARD

ARCHIBALD WILLARD died some years ago, but his soul, like that of John Brown, still "goes marching on." He painted it on canvas for all of us to see, and it is called "The Spirit of '76." The painting is not a notable contribution to art. When it was first exhibited at the Centennial Exposition in 1876 it created no enthusiasm in the art world; no critic hailed it as the work of a new genius; no art lovers burned incense before it. But every man, woman and child that cherished the simple, rock-bottom principles of patriotism greeted the picture with a quickening heart-beat. In the figures of the white-haired old man, the sturdy fifer, and the boy, marching fearlessly forward with drum and fife and waving flag, all the people, old and young, saw three generations of a nation's protest, and they thrilled at the spectacle so vividly set before them.

The story of the painting is a very simple, human one. The artist's name is Archibald M. Willard, and he was born at Bedford, near Cleveland, Ohio, August 22, 1836. He had little art training in his early years, or later, but he had a certain facility with pen and brush, and while camping near Cumberland Gap, he made pictures of that picturesque military situation, which, being photographed, were purchased by his comrades and their friends as mementoes of army life. Willard returned from the war with a great plan in mind. He would represent on large sheets of canvas the war scenes he had witnessed and sketched, and exhibit them throughout the North. He studied art for a while, and then labored long on a great panorama mounted on rollers, which he undertook to exhibit in northern towns, but the plan was not a financial success. In the end, he washed the color out of the cotton cloth, to save at least that part of the investment.

Willard then curbed his ambition, and got a plain job as a painter in a carriage shop. Willard's wagons and carriages won attention and favor because of the little paintings he often put on the side to catch the eye of the purchaser. Many a sale was made by his employer, because of these adornments.

Willard's father was a country minister, and his grandfather a Revolutionary soldier—so religion and patriotism, and love of fun were all his by inheritance—and it was the last of the three that first expressed itself in his attempt at art.

One day the daughter of his employer brought him a crude wood-cut of a dog harnessed to a wagon, chasing a rabbit, and asked him to paint her a picture like that. Using the wood-cut as a suggestion, he painted a picture called "Pluck." It showed a dog hitched to a cart chasing a rabbit, and, in the cart, two frightened children, with hair rising on end, hanging grimly to the seat and reins. When this picture was exhibited in a Cleveland photographer's window, many people stopped to look at it, and its fame spread far and wide through reproductions. This, and a companion picture, done in chromo process, were sold by thousands. Willard

Original in Abbot Hall, Marblehead, Mass.

THE SPIRIT OF '76

"FOURTH OF JULY MUSICIANS"
The "Spirit" as it started to be

now had enough money to apply himself exclusively to picture making, and sketches of a humorous nature came in rapid succession from his brush. Many of his comics were printed in the newspapers and reproduced by lithography. He illustrated John Hay's "Jim Bludsoe," and he made an amusing picture, "Deacon Jones's Experience," that delighted Bret Harte so that the latter gave the picture its title and wrote a poem to go with it.

As the Centennial Exposition of 1876 was approaching, Willard was anxious to make a picture that would be suitable for exhibition there. He had the idea of painting a group of country musicians at a Fourth of July celebration. He recalled a jolly old drummer who had a reputation for tossing his drum sticks nimbly, and creating mirth in general while marching at the head of country parades. Then it occurred to Willard that he could make a picture that would excite patriotic enthusiasm if he transferred his trio of country musicians to the battlefield. He threw aside his humorous sketches, and began to paint the picture called "Yankee Doodle" or "The Spirit of '76." His own father, a gray-haired Baptist minister, posed with the drum for the central figure. Hugh Mosher, a farmer soldier who had blown his fife through the Civil War, was chosen as the fifer of the painting. He was the most famous fifer for miles around, and was always in demand at patriotic celebrations. The picture caught and stirred the people at sight. In the face of destiny the sturdy old man and his two companions marched on, oblivious to the fact that they marched alone. In the dim distance, the flag waved, and the column was rolling up. The army had rallied, and was following to the tune of "Yankee Doodle." Altogether it made a rousing public appeal, and there was a wide demand for copies of it.

At the close of the Philadelphia exhibition, the picture was bought by General Devereux for his home town of Marblehead, Massachusetts, and there, in Abbot Hall, it still hangs. The purchase was a matter of sentiment, as well as art interest, for General Devereux's son, Henry Devereux, was the model for the young drummer boy in the picture. Probably no other patriotic picture painted in America has had so wide a circulation as "The Spirit of '76." It is known in every city, town and village, where it can be seen in frames, and on calendars, posters and mailing cards. It belongs now to the people—a picture in thousands of houses.

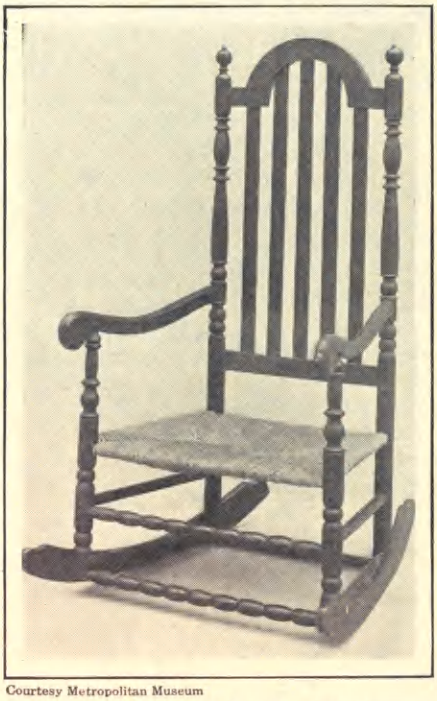
Willard continued to make sketches, with patriotic interest or with child life as their theme, until he passed away at his home in Cleveland, on the eleventh of October, 1918.

THE MODELS FOR THE PICTURE
Harry Devereux, the drummer boy (upper), Hugh Mosher the fifer, and the artist's father, who posed for the central figure

THE ROCKER CURE FOR NERVES

THE American rocking chair, out of fashion and favor in the last generation, may be restored to its old place of honor in the home by the recent declaration of an eminent French medical man that rocking quiets the nerves.

The rocking chair, comparatively unknown in Europe, has been regarded generally as an American contrivance, but students of furniture are unable to trace its origin. Rocking chairs are said to have been known in India ages ago, where they were regarded as cooler than the ordinary kind.



Courtesy Metropolitan Museum

A ROCKER MADE ABOUT 1750

Rocking chairs were probably made in America before 1750, but there is no historical record to bear this out. It is thought that the first rockers were merely ordinary Windsor chairs cut down and fitted with short boards rounded on the bottom. Twenty or thirty years later these boards were made longer in the rear and shorter in the front to increase safety and comfort. The sign of a genuine old rocking chair is the shortness of the rockers.

If there is little light on the rocking chair's origin there are early enough references in literature to the joys of rocking. It is true that most of these refer to the cradle, but the rocking chair is merely a cradle for grown-ups. In fact, there are old American prints showing a combined rocking chair and cradle; mother rocked baby and herself with one motion.

Chaucer, the 14th-century English poet, said: "The cradel at hir beddes feet is set to rokken."

Dryden, in the 17th century, translating the Latin poet, Ovid, wrote:

"High in his hall, rocked in the chair of state,
The King with his tempestuous council sate."

In the court of Charles I of England, the Court Rocker was an important person.

Everyone is familiar with the lullaby, "Rockabye, Baby, on the Tree Top."

Dr. Flavius Packer, a New York specialist in the treatment of nervous disorders, who has many rockers at his sanatorium, says: "Some people have scrapped the cradle—but it will come back. The babe of the future will be rocked to sleep again while mother sits in a low rocker and busies her hands with something equivalent with the knitting of yesterday. It may be with holding a book on science, a brush, or with the operation of a soundless typewriter."

Fashions in clothes have always governed fashions in chairs. Originally an emblem of authority and used only by leaders, the chair with a back and arms did not become a part of the commoner's household furnishings until a comparatively late date in the world's history. From that time on its design was changed with every new mode in men's and women's clothes. Thus during the times when elaborate hoops, farthingales and similar vanities were fashionable, huge chairs, many armless, were needed to accommodate the sitter and her cumbrous clothing. In the 18th century, when men of fashion wore costly laced coats the "conversation chair" was contrived, in which the dandy of the period sat facing the back and allowed his precious coattails to dangle unimpeded over the front. In a like manner, with the coming of the straight-front corset for women, the rocker lost vogue, it being impossible for a woman rigidly dressed to sit at ease in the comfortable angles of the rocker. The straight-front, like other fashions, has had its vogue. With its departure the rocking chair may be expected to take again its honored place in the American household for the comfort it affords frayed nerves.

"PUT OUT THE LIGHT, PLEASE"

LAST WORDS OF FAMOUS PEOPLE

SOCRATES: "Krito, we owe a cock to Æsculapius; discharge the debt, and by no means omit it."

RALEIGH: "Why dost thou not strike? Strike, man!" (To the executioner who was hesitating.)

CHARLES I.: "Remember!"

CHARLES II.: "Don't let poor Nelly starve." (Referring to his favorite Nell Gwyn).

MME. DE POMPADOUR: "*Un moment, Monsieur le Curé, nous nous en irons ensemble.*" ("One moment—we will go together." To the curé of the Madeleine, who had called to see her, and was taking his leave, as she seemed just about to expire).

BENJAMIN FRANKLIN: "A dying man can do nothing easy."

DR. WILLIAM HUNTER: "If I had strength enough to hold a pen, I would write how easy and pleasant a thing it is to die."

BURNS: "That scoundrel, Matthew Penn!" (The solicitor, who had written to him about a debt, and had inspired the poet with fears of a jail.)

GEORGE WASHINGTON: "It is well."

ADMIRAL NELSON: "I thank God I have done my duty."

NAPOLEON: "*Mon Dieu—La Nation Francaise—Tête d'armée—*" ("My God—the French Nation—Head of the Army.")

BYRON: "I must sleep now."

GEORGE IV.: "Watty, what is this? It is death, my boy—they have deceived me."

GOETHE: "More light!—More light!"

EARL OF ELDON: "It matters not to me, where I am going, whether the weather be hot or cold." (In answer to a remark that it was a cold day.)

KING JAMES V. OF SCOTLAND: "It came with a lass, and it will go with one." (Alluding to the intelligence brought to him, that his wife was delivered of a daughter, the heiress of the crown, and to the fact of the crown having come into his family by the daughter of King Robert Bruce).

GAINSBOROUGH: "We are all going to Heaven, and Vandyke is of the company."

EARL OF CHESTERFIELD (famous as an arbiter of good manners): "Give Dayrolles a chair."

CROMWELL: "It is not my design to drink or sleep, but my design is to make what haste I can to be gone."

MOHAMMED: "Oh, Allah! be it so—among the glorious associates in Paradise."

GENERAL WOLFE: "What, do they run already? Then I die happy."

SAMUEL JOHNSON: "God bless you, my dear." (To a Miss Morris, who asked him for his blessing.)

HENRY WARD BEECHER: "Now comes the mystery."

LUDWIG VAN BEETHOVEN: "I shall hear in heaven." (Beethoven was deaf during his later years—and composed many works without being able to hear them.)

WASHINGTON IRVING: "I must arrange my pillows for another weary night."

MCKINLEY: "It is God's way. His will be done, not ours."

EDGAR ALLAN POE: "Lord, help my soul."

KONG-FU-TSE (Confucius): "I have taught men how to live."

NATHAN HALE: "I only regret that I have but one life to give to my country."

THOMAS JEFFERSON: "I resign my spirit to God, my daughter to my country."

JOHN KEATS: "I feel the flowers growing over me."

RABELAIS: "Let down the curtain, the farce is over."

SIR JOSHUA REYNOLDS: "I know that all things on earth must come to an end, and now I am come to mine."

HENRY THOREAU: "I leave this world without a regret."

THOMAS (Stonewall) JACKSON: "Let us go over the river, and sit under the refreshing shadow of the trees."

ROOSEVELT: "Put out the light, please."

JOHN BURROUGHS: "How far are we from home?"

FRANKLIN K. LANE: "I will see you in the morning."

THE OPEN LETTER

What a story of progress in screen pictures the past quarter century tells! I wonder if any of the older Mentor readers remember the picture shows and panoramas of the days, or, rather, the nights of the seventies and early eighties! Does anyone recall Professor Cromwell and his picture lectures? For years Professor Cromwell exercised the spell of the "magic lantern"—we came to know it later as the "stereopticon"—and he enhanced the charm of his entertainment with a piano at one side of the stage and a melodion at the other, on which he discoursed sweet musical strains, while he revealed the melting beauty of "dissolving views,"—a new thing then in picture shows. In days before Professor Cromwell's innovations there were screen pictures that replaced each other abruptly, one after another, and panorama pictures that moved on rollers. How vivid and gaudy were the pictures of that time! How bold and brave were the colors—colors that proclaimed in uncompromising tones, the courage and determination of the artisan that painted them on. And the audiences of those simple days were delighted with the riot of color on the panorama screens—whether the colors were true or not. A purple cow was pleasing just because it was purple.

And, in those wonderful old panoramas, the greatest illusion of all was "night-lighting." Never will I forget the effect on my youthful mind of the panorama of "St. Peters and the Vatican, Rome," first by day, and then—by a simple trick of lighting from the back—the same scene illuminated at night. The twinkling of lights in a thousand little windows held us young people spellbound. What thrilled us most was the thought that the spectacle of the superb Cathedral and the Papal palace should be all lit up just for us. I have often wondered since whether St. Peters and the Vatican ever actually looked as gorgeous at night as our youthful eyes saw it on the screen of Professor Cromwell.

The day of Professor Cromwell, and all the other "Professors," passed and then came the treat of a perfected stereopticon. Progressive, intelligent, enterprising men like Stoddard, Burton Holmes, Elmendorf, and Newman traveled the world over and brought their treasures of splendid photography back to us. As soon as the vitascope entered the field they took that on—and also the "kinemacolor" process that gives us colors that closely reproduce nature's own. These men have become our chief travel-picture benefactors. Through the winter evenings they have taken us nearly everywhere and shown us nearly everything. The Elmendorf and Newman pictures are well known to Mentor readers for they are published in our pages; so, we enjoy the rich benefits of the experience of both of these distinguished camera artists.

★ ★ ★

And now we have the crowning achievement of modern photography, the Motion Picture Play—perhaps we might better say the picture plays have us, for they are about us everywhere. They are well named "movies," for, in the final analysis, that is their commanding appeal. *They move.* Some might contend that the film pictures hold us because they show us great life-dramas. But, if any of those very same life-dramas were presented in a series of "still" pictures, the essential appeal would be lacking. It is because they *move.* Throw some bits of crumpled paper on a table in a crowded room, and they will attract little attention. Tighten those bits of paper with twisted elastic so that they jump around in a lively fashion, and everybody will crowd about the table and watch them with interest. What is the answer? Motion. Motion means life—and life is the supreme interest of human beings.

It was a great day for us mortals when Galileo said of the earth, "It moves." Everything on the earth has been more interesting since then.

W. D. Moffat

EDITOR

THE OCEAN

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The Sea's Floor is No Mystery to This Man;
Prince Albert of Monaco in His Laboratory

"How like infinity itself seems the sea! The great bulk of it, the wide spread of it, the far reach of it are appalling. Horizon lines are not its boundaries, nor blue walls of sky its confining barriers. There is no place of its beginning nor yet of its ending. Its continuity is unbroken. The land seems but a handful of islands sown carelessly here and there upon the waters; but the sea stretches out unceasingly, keeps circling on forever."

JOHN C. VAN DYKE.

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The Promontory of Monaco

The home of one of the world's greatest oceanographers, Prince Albert I. On a twin height further along the Mediterranean shore is the casino of Monte Carlo. The ruler of Monaco receives $100,000,000 a year rental from the famous gambling resort.

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THE OCEAN

THERE ARE NO SEA SERPENTS IN IT, SAYS PRINCE ALBERT OF MONACO

SEA serpents and armor-plated submarine monsters that come to the surface occasionally and terrify vacationists do not live in forests of lacy vegetation in the great depths of the sea.

So says one of the greatest living students of the ocean. And so passes one of the public's favorite legends.

Prince Albert Honoré Charles, ruler of Monaco, the Mediterranean principality that contains the world's most famous gambling resort, Monte Carlo, is the man that killed the sea-serpent story. The Prince is not concerned with Monte Carlo except in the matter of revenue from the syndicate operating the celebrated casino; his fame rests on his distinguished achievements in science. He has devoted his life and much of his fortune to plumbing the depths of the sea and studying the life that exists there. The Prince maintains an especially equipped yacht, a staff of scientists, and extensive museums in Monaco and Paris for this purpose.

On a visit to the United States to receive the Agassiz gold medal—the highest honor this country can bestow upon a man of science—the Prince gave out statements that overturn completely many of the popular notions about life and conditions on the ocean's floor.

Great forests of filmy water-plants, waving gently to and fro, stirred by monsters, eyeless and thick-hided because of the great pressure, live only in people's imaginations, the Prince's research shows; the deepest valleys of the sea are barren as the tops of the earth's mountains.

"There may be some big animals in the ocean of which we do not know," the Prince told Wilbur Forrest, of the *New York Tribune*, "but my researches have not disclosed any of them.

"Giant octopuses, measuring forty or fifty feet across, have been brought

Courtesy Science Service

Bringing Up a Deep-Sea Net

the sea, one must know where and how they live. These animals must find their life in water as we find it in our atmosphere. There is a little of everything in the sea—gold, silver, and every metal known, yet in small quantity. There is oxygen, hydrogen, and a few gases, and the beings that live in the sea must possess special apparatus to exist. To sea life the matter of pressure is more complicated than the composition of the water. Living in pressures ten to one hundred times the normal atmospheric pressure at the surface makes considerable difference.

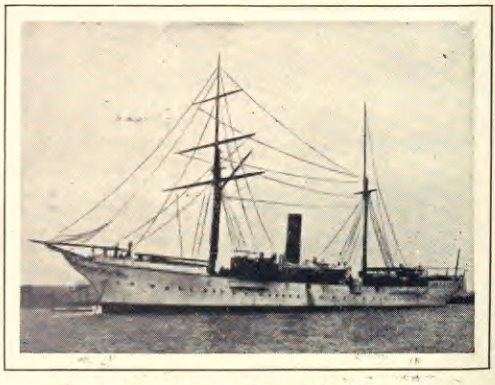
"Deep-sea fish, again contrary to popular belief, have perfect eyes and perfect bodies, differing only in the fact that they are built for pressure resistance. Their muscular composition is different, so as to resist the weight of water. Nature provides the deepest sea fish to the surface, but it is a well-established fact that no large sea animals live in the great depths, because there is virtually nothing there for them to eat. The inhabitants of the high-pressure ocean valleys must live on what filters down from above. There is life there, however; we have found five or six species of sea beings at the greatest depths."

The Prince's Marine Museum, Monaco

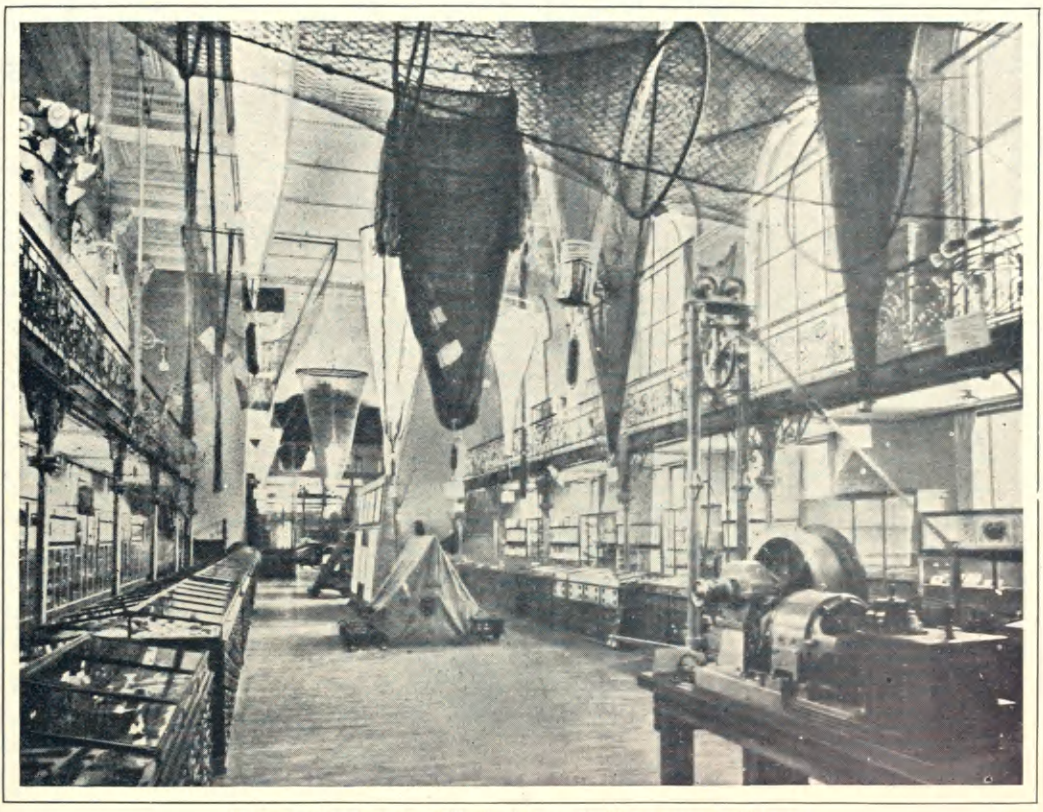
Prince Albert, when a young man, served in the Spanish and French navies. He observed that geography was much studied, but that comparatively little was known of the sea, the largest part of the earth's surface. At seventy-three, he had given thirty-five years to ocean study.

Here, in his own words, are some of the things the Prince discovered when he studied life below the surface of the sea:

"Before studying the animals of



The Prince's Research Ship



Strange Specimens Fill the Prince's Museum at Monaco

with luminous organs, enabling them to light their way about wherever they go. Some of these creatures are so delicate—though built for pressure—that we cannot touch their bodies without breaking them. But the most delicately constructed animals of the depths are able to come to the ocean's surface without suffering, and they do so at night.

"It was once a difficult and complicated task to secure animals from the deepest part of the sea, but we have found that they come to us. Within thirty or forty yards under your ship, after nightfall, you may be sure that deep-sea creatures are there living, fighting, and eating. A great biological tide brings them toward the surface by night. The tidal wave, which is ocean wide, moves away from the sun.

"It is one of our most interesting discoveries and very precious, in so far as it affects the biological side of the sea. The creatures that live with their own light in the darkest depths cannot face the sun, and nature strangely propels them upward for their sustenance.

"There is a law that the deeper one goes into the sea

Principality of Monaco

the more identical are the species. All around the world, if you could walk the ocean bed, you would find the same animals. This is regulated by temperature, mainly, which is the same after a depth of about two thousand meters. Thus, in the Arctic Sea, in the Pacific, Atlantic, and at the Equator where animal life, both above the water and in the shallows, is somewhat varied, according to atmospheric conditions and temperature, you would find an even balanced breed of life in the greater depths.

"We have experienced extreme difficulty in sending down instruments to great depths, because virtually all types are not immune against leakage with the great weight upon them. The water at great depths will permeate almost anything except solid blocks of metal."

The scientist believes, however, that man will some day devise a means of ocular exploration of the ocean's bed at any depth.

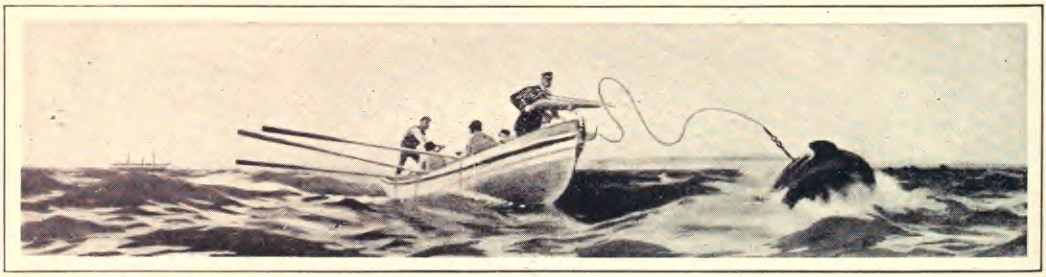
© Keystone View Co.

The Prince of Monaco

A student of the ocean since his youth. He has plumbed the deepest parts of the Atlantic and brought to the surface creatures that live in the valleys of the sea.

The recent visit of the Prince of Monaco to the United States was not his first. He has crossed the Atlantic several times, and his yachts have more than once been seen in American harbors. In the past thirty years four vessels have been equipped to serve science.

The *Hirondelle II* is a steel vessel of 1,650 tons. During all its cruises the owner is in command, directing his staff and crew in their search for new facts concerning the world at the bottom of the sea. One of the priceless contributions made by the Prince to Oceanography is a world-chart that shows all the deep-sea soundings that have been made up to the present time. His chief monument in the eyes of the public, however, is the superb museum and aquarium, built in 1909, near his palace on the Mediterranean. Thousands of travelers visit the collections every year.



From a fresco in the Oceanographic Institute of Paris

The Prince Harpooning a Whale on One of His Research Trips

In the Metropolitan Museum of Art

The Gulf Stream as Painted by Winslow Homer, the Famous American Artist

THE GULF STREAM

By HAWTHORNE DANIEL

Formerly Lieutenant U. S. Navy

THE Gulf Stream is a river three thousand times as large as the Mississippi—ten thousand times as large as the Hudson. It bathes the shores of Cuba and Florida, of Georgia and the Carolinas; it sweeps past the Newfoundland Banks; it gives warmth to the British Isles and Norway; it prevents ice from forming along the northern coast of Russia during the long Arctic winter; it moderates the cold of far-off Nova Zembla. It flows ten thousand miles, and scatters tropical seaweed along bleak and little known lands. Its mighty current has its origin in the heat of a tropical gulf, its goal amid the icefloes of an Arctic sea.

Before the discovery of America—before Leif Ericson voyaged to Vinland—before the Norsemen became rulers of the sea—the inhabitants of Ireland, of Scotland, and of Norway found strange seeds, and stranger bits of wood along their shores. They knew nothing of a land far to the west, and so wonderful stories grew about these wandering fragments of vegetation. On these tales Leif Ericson may have based his theory that there was land to the west. It may be that because of these bits of driftwood Iceland was discovered, and, later, Greenland.

No hint of the existence of the Gulf Stream was let fall by the explorers who crossed the Atlantic until Antonio de Alaminos, returning from

© Brown Bros.

The Gulf Stream Warms the Coast of Florida

Mexico through the Florida Straits in 1519 to tell his royal master, the King of Spain, of the successes of Cortez, remarked on the quickness of the passage that he had made. It was not for some time that he concluded that he had crossed in the grip of a mighty stream. He was the first mariner to note that "great oceanic highway." Even after it was found to exist it was not used—and gradually all knowledge of it seemed to fade away.

It was not charted until a few years before the Revolutionary War, and even then it was marked very indefinitely. Benjamin Franklin, then head of the American Post Office, learned that British shippers were contemplating sending their ships to Rhode Island instead of to New York because, they said, it took two weeks longer for ships to cross from Falmouth to New York than from London to Rhode Island. It seemed strange to our great Colonial thinker that so great a difference should exist in the time to ports within a day's sail of each other, especially as the ships from London to Rhode Island had by far the longer voyage. Franklin thought over the question for some time, and then spoke of it to an old whaling captain of his acquaintance. The old man did not appear surprised, and immediately offered his explanation. The ships from Falmouth to New York, he said, kept much farther to the south than did those from London to Rhode Island, and consequently they breasted a strong current that flowed northeast at the rate of two or three miles an hour. Franklin made further investigations, and finally sent a rough but comparatively accurate chart of the west side of the stream to the shippers in England. But it was not for some time afterward that the charts began to show, even in the vaguest sort of a way, the course of this enormous river.

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—And Makes the Valleys of Ireland More Fertile

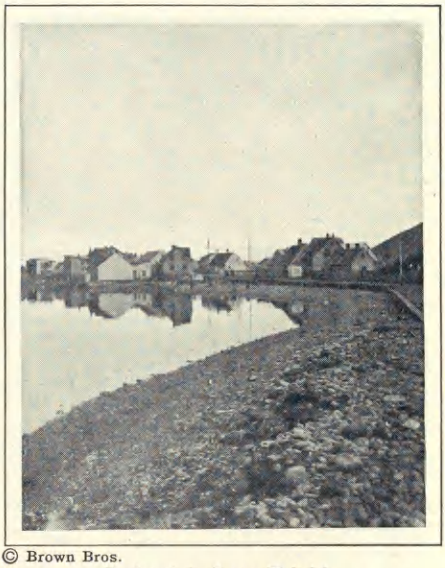
Now, after many years of scientific observations and researches, we know accurately where the Gulf Stream flows, why it flows, and what it accomplishes. Every ocean has its currents. The Pacific and the Atlantic, the Indian, the Arctic and the Antarctic Oceans all have their streams. They radiate and meet, cross and recross, in many instances without mixing their waters to any great extent. They flow in set courses along known routes. Roughly, there are five great warm currents, with, of course, many additional variations. These five great currents all originate along the equator, being caused by the westward blowing Trade Winds.

These winds blow steadily all the year from east to west. They may be light or they may be strong, but they always blow, and they are the fundamental cause of every other great, warm ocean current. Their constant action sets up a flow of water westward in the Atlantic just north of the equator. This water, encouraged by these winds, moves slowly toward the northeast coast of South America which runs from southeast to northwest. The moving water is directed by the coast of South America into the Caribbean Sea, and flows between Yucatan and Cuba into the Gulf of Mexico. The Gulf becomes a reservoir, and its surface is raised by the incoming flood until it is two or three feet above the level of the Atlantic. Then the water seeks an outlet. There are but two straits connecting the Gulf of Mexico with outside waters. One is the Yucatan Channel through which the Trade Winds are constantly forcing more water. The other is the opening between Florida and Cuba, through which the stored-up waters of the Gulf find their only possible escape. Gathering itself into an enormous river it sweeps

through the narrow passage, passes the Florida Keys, is turned to the north along the coast, and finds itself once more a part of the Atlantic as it traverses its course past Florida, Georgia, and the Carolinas.

During the time it has taken this water to pass from the Atlantic to the Carribbean, to the Gulf of Mexico, and back again into the Atlantic, it has stored up a great deal of the heat of the tropics. It has become, in fact, the circulating system of a vast hot-water furnace. It has been heated to a temperature of over eighty degrees, and as it flows north it warms the shores it passes.

The stream follows the coast very closely until it passes the projecting bars of the North Carolina shore, and there it is shunted out to sea, where, for the first time, it comes into contact with the colder water from the north. It is because of the radical difference in the temperatures of these waters at this point that Cape Hatteras is one of the world's most stormy spots. But despite the fact that the weather is almost continuously stormy, the waters of the Gulf Stream and of the Cold Wall do not mix. A line as distinct at times as a pencil mark is maintained between the dark blue water of the Gulf Stream and the green of the colder sea.



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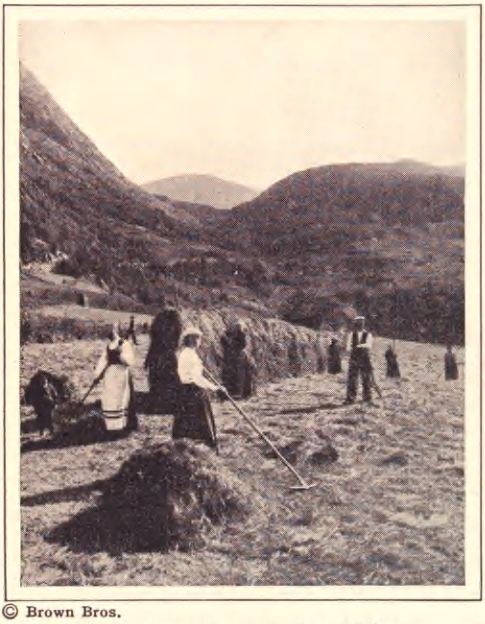
Iceland is Less Frigid



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Norway's Harvests Are Richer

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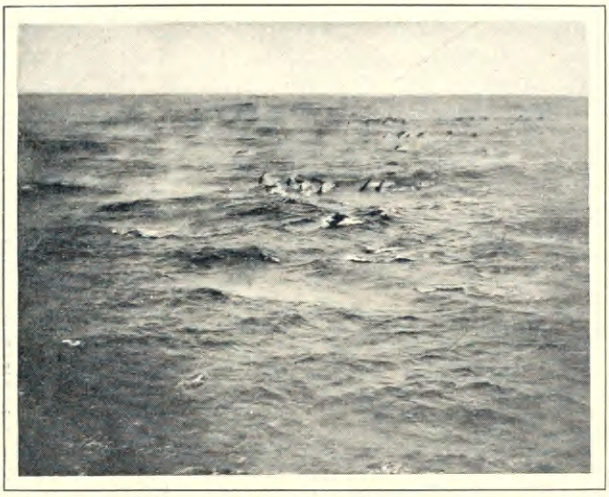
And Sweden's Fields Greener



Porpoises Prefer the Warmer Water of the Gulf Stream

From Cape Hatteras the Stream flows diagonally across the Atlantic, past the Newfoundland Banks, touching Ireland and Scotland, and flowing along the Norwegian coast into the Arctic Ocean.

Upon leaving the Florida Straits, the Gulf Stream is a comparatively narrow and exceedingly swift current, but as it crosses the Atlantic it widens greatly and its movement is correspondingly slower. After passing the Newfoundland Banks the Stream has become hundreds of miles in width, and the prevailing winds of this vicinity have thousands of square miles of warm water from which to collect moisture. These winds, which blow a very large part of the time from the west and southwest, accomplish two results: First, they collect moisture which they carry on to Europe, and second, they assist in maintaining the movement of the Stream.

Having blown over countless miles of the warm water of the Stream they have taken from it a part of its warmth, which they in turn impart to the lands they pass. Were it not for the Gulf Stream and the winds that blow across it, the British Isles would hardly be habitable because of the cold. Without this help Norway and Sweden would be uninhabitable by any save people as hardy and stout as the Eskimos. Labrador, farther to the south than any of the Scandinavian countries, is a cold and dreary waste. The Gulf Stream makes possible the huge agricultural district of central and western Europe, which supports a population greater to the square mile than any other district in the world, except some parts of the Orient.

Along its entire length the Gulf Stream carries a kind of brown seaweed, called Gulf Weed, that floats in large clusters or in small festoons, in long branches or in tiny strands—a familiar sight to travelers on ocean liners.

The speed of the Gulf Stream varies. As is the case of most rivers, the Stream runs more rapidly near its source. Through the Florida Straits the movement is most rapid, but after leaving Cape Hatteras it slows down.

The Gulf Stream in Mid-Ocean

While early in its journey it flows at the rate of three miles an hour or more, it soon drops off to one and a half, and upon reaching Norway the movement is very slow.

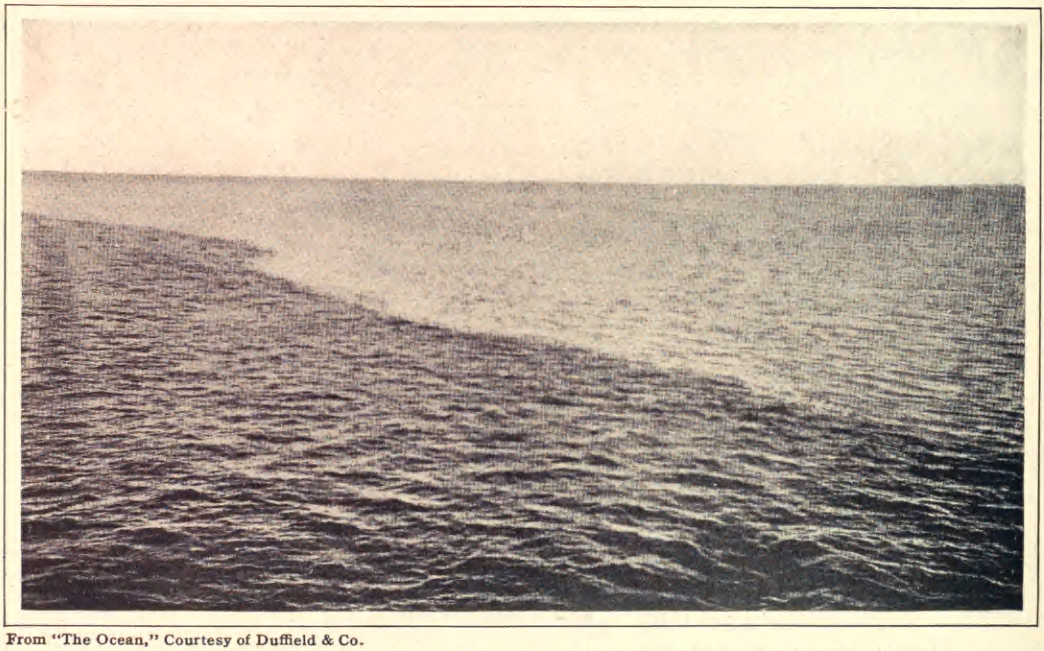
The depth to which the movement is carried also varies. Between Norway and Iceland the Stream is from 1,800 to 3,000 feet deep, but where it occasionally crosses a cold current its depth is much less, due to the fact that the warm water rises over the cold.

The temperature of the Stream is its greatest asset, and from the time it leaves the Gulf of Mexico until it fades away in the Arctic it gradually cools. Along the Florida coast its temperature is more than eighty degrees Fahrenheit. When it has crossed the Atlantic and has approached Norway its temperature is between 45 and 59 degrees, and near Spitzbergen it has cooled to 37 or 38 degrees.

But, in the Arctic Ocean, water at 37 degrees is able to accomplish much. Archangel, the Russian seaport on the White Sea, is much farther to the south than the Murman Coast. The Archangel port is closed to navigation for many months each year, while the Murman Coast, along which flows the water from the Gulf, is ice free the year around.

The oceans of the earth have many streams, both warm and cold. The effect of some of them is good, of others not so good. But no other current has the energy and volume of the Gulf Stream—no other current affects so large a portion of the earth's surface.

From the time the Gulf Stream passes the Florida Keys until it loses itself off Nova Zembla in the waters of Barenta Sea, its action is beneficial. Its warmth serves to make habitable many lands, and its moisture serves to make possible the crops on which the inhabitants of those lands are dependent.



From "The Ocean," Courtesy of Duffield & Co.

The Gulf Stream Has Clearly Defined "Banks" of Water. Observe the Dividing Line Between the Gulf Stream and the Colder Ocean Water

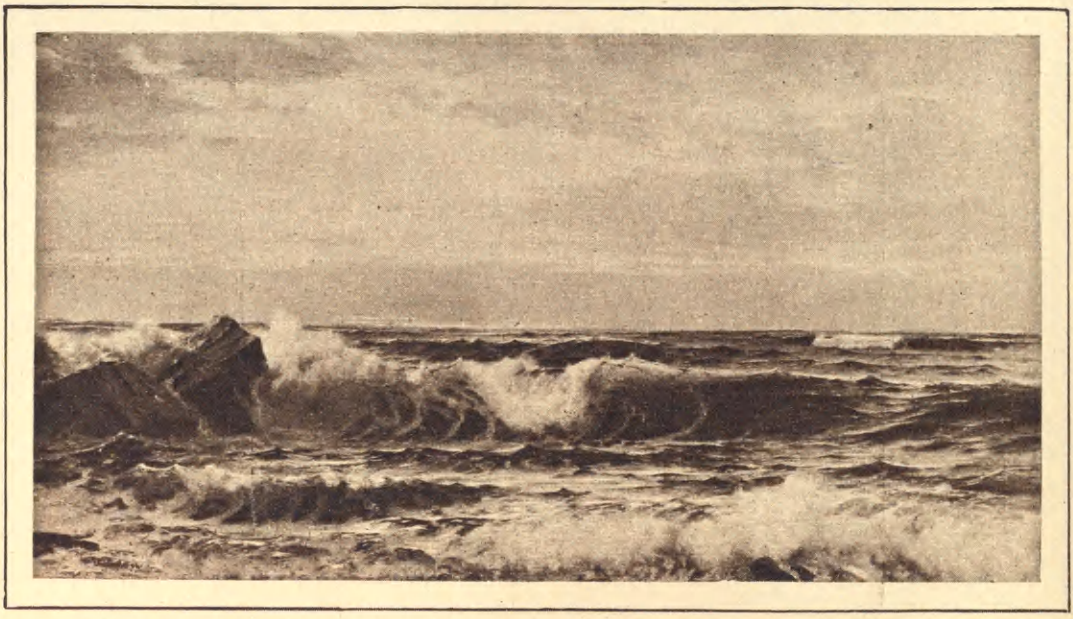
THE SEA IN ART

By W. D. STARKWEATHER

Copyright, Detroit Pub. Co.

Worcester Art Museum

THE NORTH ATLANTIC, BY C. H. WOODBURY



Courtesy M. Knoedler & Co., New York

CLEARING AFTER A STORM, BY W. T. RICHARDS

THE SEA IN ART

By W. D. STARKWEATHER

DESPITE the powerful appeal of the sea to man, the painting of marines is comparatively a modern achievement. In the earlier periods of modern art, no particular attention was given to the study of open air nature, the depiction of various effects of atmosphere was generally disregarded and landscape painting was not seriously attempted. Artists gave their time to portrait and figure decorations for the houses of great art patrons or to religious pictures for churches and other ecclesiastical institutions. Where landscape was introduced into these compositions it served only as a background, was of a formal and conventionalized kind used merely to fill space, aid the composition, or lend point to the picture. It was not indeed until the eighteenth century that the painting of landscape became generally recognized as a legitimate sphere of art activity. Even then most early landscapes were pompous and stilted representations of celebrated "views" of historic monuments and buildings.

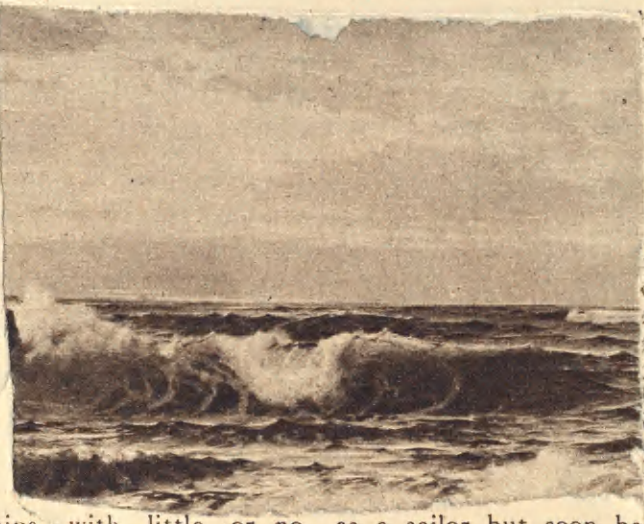
Early marine painting reflected the formal spirit of early landscape painting. A tempestuous sea, liberally sprinkled with fiercely fighting galleons would be used with a red brocade curtain and a bit of balustrade as an appropriate background for a full-length portrait of an admiral or monarch of some maritime nation. Such marine pictures as were painted represented historic naval battles or dramatic shipwrecks. These early pictures were conceived in the most highly theatrical and artificial spirit. The battle-pieces would show a swarm of galleons fighting at close quarters, with many vessels sinking, men escaping into boats and clinging to floating wreckage; all the vessels both fighting and sinking would be covered with enough flags for a regatta; these flags were generally grossly exaggerated in size and were always shown whipping furiously in the wind. Apparently, also, all these early naval engagements were fought in the midst of furious tempests, the waves are mountainous and the skies cataclysmic in their inkiness. Shipwreck scenes were of the same romantic character. A galleon, illuminated by a sort of spot-light from the heavens would

OFFICIALLY NOTED

OUTER SURF, BY FREDERICK T. WAUGH

Original painting in Art Institute of Chicago

OFFICIALLY NOTED



be shown lifted in an impossible manner upon the crest of an enormous wave just before being dashed upon rocks. The drawing in all these pictures was very bad. It is difficult to gain any adequate idea of the construction of a galleon from most of them. The artist placed cannon, portholes and windows in his ships with little or no regard for any possible deck arrangement; the rigging is frequently of the most fantastic character, dictated purely by the artist's whim and his ideas of decoration. These early draughtsmen were often as cheerfully ignorant of the set of a sail as they were of the mysteries of rigging; occasionally they depicted a ship under full sail progressing gaily along in the teeth of a howling wind!

From these highly artificial first efforts several schools of marine painters slowly evolved. They founded their work on a closer study of nature and abandoned many of the set conventions which had hampered their predecessors. Many of the artists of these new schools had followed the sea in their youth; their pictures profited by what they had learned of ship construction and management.

The earliest of the great schools of marine paintings was the Dutch. A maritime country with an extended coast-line, and covered by a network of canals, the Dutch were a seafaring people, as hardy sailors as they were eminent artists. It was but natural that a school of painters should have evolved in Holland who gave their genius to the celebration of the marine triumphs and struggles of their race. Of early Dutch masters the most famous are Willem van der Velde the elder (1610–1693) and his even more celebrated son, Willem van der Velde, the younger (1633–1707). The elder Van der Velde began life as a sailor but soon became known as a nautical draughtsman, in which capacity he was employed by the Dutch government. His knowledge of the shipping of his day was unequaled and his drawings and paintings are remarkable for their exactitude. He made his studio on a raft and worked in the midst of the fleet of his friend Admiral Ruyter. He witnessed many naval engagements and his sea pictures rank today as authoritative documents on the shipping of the time. Willem van der Velde, the younger, surpassed his father and became the greatest Dutch marine painter. A great place in Dutch art must be given to Jacob Ruisdael. His somber marines, recording for the most part the fearsomeness of the sea, are distinguished by great grandeur of composition.

Ludolf Bakhuysen was another accomplished craftsman; during tempests he frequently risked his life by venturing in a small boat far out from land to study waves in furious motion.

The English, another great maritime people, were not slow in following the lead of the Dutch in establishing a school of marine painters. Their greatest master in

GROUND SWELL, BY PAUL DOUGHERTY

Copyright by The Hispanic Society of America

BEACHING THE BOAT, BY T. SOROLLA

this style was the immortal Turner (1775–1851). Born in London, the son of a hairdresser in whose rooms the artist's drawings were first exhibited, Turner received but a slender art education. By his genius, however, he gained a foremost position in English art; his life was a constant series of successes. He painted principally landscapes but his prolific genius gave the world a superb series of sea pictures, unsurpassed for their rendering of the majesty, the poetry and drama of the ocean. Not only did he grasp the immensity and tragic strength of the sea but he understood and rendered with exquisite subtlety effects of luminous calm and placid beauty. Besides calms and tempests he painted views of the coast, naval combats, sun-rises and sunsets, moonlights and the waters of Venice.

His devotion to the effects of light became greater as he grew older. During the last years of his life he sacrificed form to color, light with its prismatic variations engrossing all his attention. He attained effects of unparalleled luminosity; he was the sun-god of art. His paintings are really dramatic pictorial poems, works of transcendent imaginative genius that have never been again equaled by his successors.

Boston Museum of Art

THE LOOKOUT, "ALL'S WELL," BY WINSLOW HOMER

Among early marine painters France can boast of Joseph Vernet (1712–1789), who became the first marine painter of the Continent and was patronized by many courts. He painted to order for the King a series of views of French seaports which made him famous. His works are typical of the artificial and theatrical taste of the period. To Vernet nature was merely a setting which he arranged and disposed at his will. He did not search for truth but for a semblance of truth which he strove to make more dramatic than reality.

As modern artists progressed in the study of nature, analyzing light and light effects, subtly searching absolute truth of natural effect, the artificial marine disappeared just as did the artificial romantic landscape. Strong schools of marine painting grew up in every country.

It is only within the last few decades that an accomplished group of marine painters has evolved in the United States. By the time that modern American artists began to occupy themselves with marines, the sailing ship was already disappearing from the ocean. The steamer, which replaced the sailing ship, has never made much appeal to painters; it is too hard to outline, too mechanical, too dark in color; it lacks the touch of romance, the bird-like suggestion of quivering life that distinguishes the sailing vessel. So it was but natural that American marine painters should have devoted their attention to hardly more than the sea itself, as it swings in the vast rhythms of mid-ocean or beats to breakers upon our rocky coasts.

And how well they have painted the sea! By a close study of nature they have attained astounding effects of naturalism. They are experts in the structure of wave form and in the complicated science of wave movement.

The earliest of the modern American school of marine painters was William T. Richards who belonged really with the old Hudson River School. Many critics find his pictures too photographic and his range limited. He repeated again and again practically the same picture, a breaking wave

(Continued on page 22)

Detroit Institute of Art

THE MISSING VESSEL, BY F. H. M. REHN

Art Museum, St. Louis

Art Institute of Chicago

Corcoran Art Gallery

MANY and varied are the moods of the restless sea—and it is along the shores that its changing tempers find fullest expression.

The accompanying group of pictures reveals the sea in sunshine and calm, the long rolling surf slipping smoothly over the sands, making a cool, moist playground for children; again as it beats uproariously against a rocky beach, or tosses its white spume against precipitous cliffs; then is shown the spoils of the storm—the battered wreckage cast up on a lonely beach.

In the upper left-hand corner, and in the center at the

"ALONG THE SHORE OF THE

Worcester Art Museum

Courtesy M. Knoedler & Co., New York

top, are two pictures by Paul Dougherty, the one showing a bit of Maine coast after the gale, the other, steep cliffs resisting the onslaught of the sea. At the right, at the top, is Winslow Homer's famous picture "The Gale." At the left we see Edward H. Potthast's sunny picture of children making a happy holiday at the edge of a summer sea. In the middle, W. T. Richards shows a long, peaceful stretch of surf on the coast of New Jersey. At the right is Josef Israel's picture, "The Fisherman's Return," and below we see Renauf's group of shattered derelicts washed ashore after the storm.

LOUD SOUNDING SEA"—*Homer*

with the light showing through it. There is no denying, however, his accomplishment in his own field. The delicacy, the thinness, the wetness of his combing breakers have not been surpassed.

Winslow Homer, one of the very greatest, and possibly the most celebrated of American marine painters, was among the first artists to interpret the primitive life of our New England coast. He loved the deep sea in heavy action; he particularly felt the weight and force, the majesty and drama of the ocean. It is with the grey and green oceans of Maine where he lived that we especially associate him, but he spent considerable time in the West Indies and in his famous "The Gulf Stream" in the Metropolitan Museum rendered superbly a tropic sea with its rich color, its water spouts, its sharks, its curious blend of the opulent and sinister. The underlying structure of his compositions is always large and excellent. In all the sea pictures of Homer there is a dignity and sweep—a certain quality of sublimity that makes them epics of the deep.

St. Louis Art Museum

LA CREPUSCULE (TWILIGHT). BY ALEXANDER HARRISON

An entirely different way of regarding the ocean is reflected in the work of Alexander Harrison. Harrison became internationally famous in the middle '80's by a series of large pictures representing for the most part the wash of fairly tranquil water upon flat beaches. He is particularly fond of the twilight hour, such as he shows in his "Crepuscule" in the Corcoran Gallery at Washington. He is a master of opalescent tone and of delicate vibration of color. He is unsurpassed in his power of suggesting the creeping movement of water over flat sand. Harrison is all pensiveness and tenderness, a poet of the sea in twilight mood.

Emil Carlsen, born in Copenhagen, but for fifty years a resident in our country, is another artist whose pictures of the ocean are works of delicate poetic charm. He has confined himself to no particular mood of the sea; he has painted surf, deep water and calms, rocky shores and tranquil beaches always with exquisite quality and with a very fine and charming vision. He has occupied himself with a search for a certain lovely quality in his color and tone and a beautiful effect of luminosity.

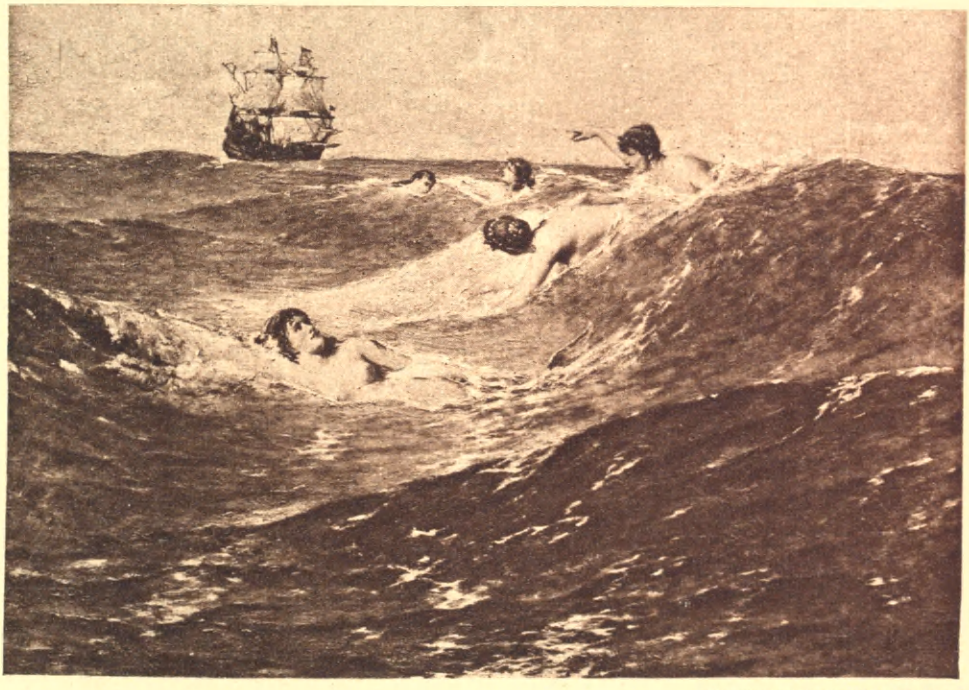
Charles Woodbury, of Boston and Ogunquit, Maine, with Frederick Waugh and Paul Dougherty of New York are of a younger group of painters. Woodbury evokes for us the loneliness of the sea. It is the wasteless deep which he paints simply, frankly, without accessories or exaggerations. When he paints a mid-ocean, one feels that it is a mid-ocean and that the land is 2,000 miles away. He is pre-eminently the psychologist of the sea—a great interpretative artist.

It is the power of the sea that one feels in the work of Frederick J. Waugh. Born in Bordentown, N. J., in 1861, of a family of artists, Waugh has given a lifetime to the study of the ocean. For nearly fifteen years he lived in England painting many canvases of the rocky shores of England's southern coast and of the Channel Islands. He is justly famous for his vigor and his mastery of wave form and movement.

Paul Dougherty, the youngest of well-known American sea-painters, is scarcely over forty. But his work is already represented in all the great museums of the country and has deservedly won awards in the exhibitions of a dozen cities. He is particularly happy in his depiction of heavy seas breaking among rough rocks with effects of flying spray, the whole often touched with warm late afternoon sunlight.

Happy indeed is the lot of this talented band of American marine painters; splendid their accomplishments. They have worked and played upon the waters of the great deep: what they have seen and felt there they have had the skill to record in noble art. Their pictures will live long after them, a delight to all who go down to the sea, a precious legacy of beauty bequeathed to mankind.

OPEN SEA, BY EMIL CARLSEN



Metropolitan Museum of Art, New York

IN STRANGE SEAS, BY G. W. MAYNARD

LIFE OF THE SEA

By JOHN C. VAN DYKE

AFTER the passing of the explorers, slavers and gold seekers, came the scientific exploration of the sea. Since the eighteenth century began, all features of the ocean—from its coral islands built up to its rocky shores pulled down, from the glowing equator producing the energy of the great sea currents to the icy poles whose chilling streams restore the equilibrium, from the tides that swell the bays and harbors to the evaporation that drinks at the sea's surface—have been pried into and exploited. As for the color and light of the wave, its rise and fall and motion, they are no longer mysteries; the flora of the shallows and the fauna of the depths have been classified; and even the countless minute forms of life that show only as phosphorescence upon the surface of the sea have come under the microscope, have been carefully analyzed and differentiated in the laboratory.

PLANTS AND ANIMALS OF THE SEA

Apparently all is known to us and the sea has no further secrets to reveal. And yet, in a vague way, we feel sure we are only on the threshold of its understanding. For perhaps the sea is the one original element, and out of it have come all the others. In its depths, far down in the chill waters beyond our light and beyond our life, the rock strata of the earth may have been molded into shape. Centuries of time would have passed while the outworn shells of sea life were falling from the surface to the bottom and, with meteoric iron and star dust, forming the body of the rock strata. Centuries again would have passed while the slow-moving water was rubbing the strata into form and passing it into substance by its enormous weight. At last, when its time was come, perhaps the great sea bed began to rise. The lateral pressure of the earth's crust forced it upward inch by inch, foot by foot, through a long series of years until finally the black slimy nose of the bed emerged from the water and became an island. Another age and the island had become a portion of a continent, and had baked hard and dry in the sunlight. Still another age and perhaps the nose had lifted into a mountain ridge, wearing away by erosion, and thus finding its way by the rivers back to its early home in the sea.

Not the dry land alone, but the life of the globe, did it not also come up and out of the sea? Perhaps there was a time when there was naught but the omnipresent sea, circling as a flashing ball in the solar system. Perhaps it was then a mass of life, and there was no inorganic matter existent until some of that life began to die. The skeletons of the dead that sank through the waters and hardened in a mass at the center, were the first formed strata of the solid earth. The trail of the organic is still apparent in the inorganic. Leonardo da Vinci recognized the sediment of the sea in the shell layers of the Apennines; and the blocks of the Colosseum at Rome, the pyramids at Ghizeh, still show these minute shells under the microscope. The Alps and the Andes are but so much hardened ocean ash, and perhaps the whole earth is but the compact mold of dead things.

The idea that the sea was the beginning of life, that its very atmosphere, so to speak, was an opalescent mucus, alive and capable of development in itself, was at first considered fantastic; but since then have not the scientists put hands upon this very idea and used it? Is not this opales-

From "The Opal Sea," courtesy of Charles Scribner's Sons, New York

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A ROCKY COAST, BY CARLTON T. CHAPMAN

Toledo Museum of Art

cent mucus the protoplasm of the evolutionist? And the sea is filled with it. Often when sailing in the tropics the watcher lying along the bowsprit sees, down through the blue-green water, drifts and skeins of this thin mucilage receding by steps into the abyss and extending for many miles in every direction. The poles possess it in common with the tropics. The sea life lives upon it and is perhaps bred from it. It is the lowest form of life. No other element than water could produce it or support it in such quantity.

And yet with these powers of life, these potentialities of creation, how sublimely unconscious in its workings seems the sea! Great spawns of life go out from it, species by the hundreds of thousands; they disappear like mists in the sun, they reappear like mists; but their coming and their going are one and the same thing to the great Mother. Never has she done more for her offspring than to give it facilities for existing and expedients against sudden death. Death is not the unexpected. All through the kingdom of the sea some must die that others may live. It is the law of being and the Ocean Mother never puts forth a hand to restrain or check it. She is wholly indifferent.

Art Institute of Chicago

STORM QUIET, BY PAUL T. DOUGHERTY

For the creatures of the land—the creatures not of her spawning except perhaps in the early days—the sea has, if possible, even less care. They belong to a different brood and have no adaptation to the water. The sea knows them not.

Above all she never knew man—the most unseaworthy of all the earth-brood. He has fancied that she was his enemy, that she wilfully devastated his coasts and destroyed his fleets; but the sea indifferently beats whither it listeth, and if it break the ribs of a ship it shows only how ill adapted was the ship to the sea. What does a cockle shell in such an element? All man's commerce and conquest, all his ventures in civilization, all his philosophy, science, and art have been as nothing unto her. He has sent forth fleets, he has founded empires by her shores and peopled cities by her bays; but these have made no impression upon her. The destruction of Egypt and Assyria, the fall of Tyre and Sidon, the conquests of Alexander, the vast holocaust of Rome never so much as caused her a quiver. Her waves lapped the blood from the steps of Carthage in the days of Hamilcar and lapped the weed on the same steps when all was silent in decay. Her waters bore the transports of the believing crusaders going to the Holy Land, and they also bore the black fleets of the Barbary corsairs on robbery and murder bent. What matter to the sea who they were or whither they went! All things of earth may come and go. But the sea lasts.

Yet men quarrel for her possession and talk vainly of being "rulers of the wave." One race of coasters drives another race from the pathway of commerce and thinks thereby to gain control. But power and mystery and death are still there. For many years the waves lie still and seem to slumber, and then, in a night, they rise up in storm to engulf and strangle. It is but a momentary happening—a mere accident. An area of water is wrinkled by the winds and other portions of the sea are not even aware of it. The great depths are as unruffled as ever. At heart, eternal calmness, serene repose are always with the sea.

And always eternal beauty. In every clime and season, from dawn to dusk, from dusk to dawn, it has the stamp of supreme beauty. Immensity and power are there, grace and rhythm of movement run with its waves and currents, light and color give it brilliancy and splendor. The whole life of the world lies there conserved by its own energy—serene, indestructible, eternal.

Metropolitan Museum of Art, New York

AEGEAN SEA, BY F. E. CHURCH

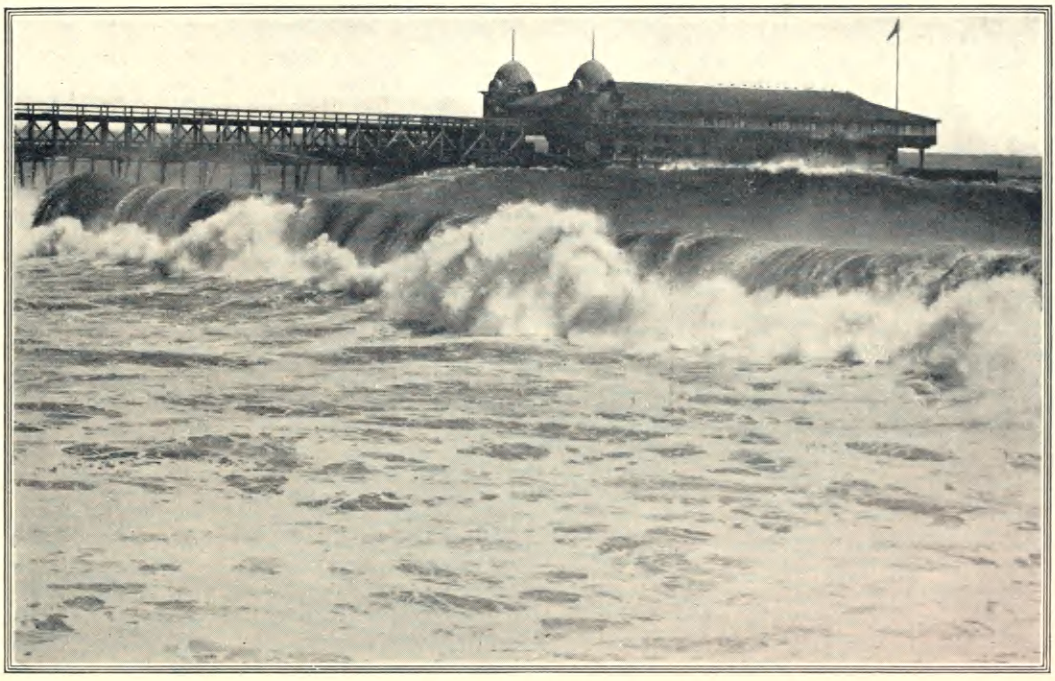
ON THE COAST OF NEW ENGLAND

FROM PAINTING BY WILLIAM T. RICHARDS

PHOTOGRAPH BY LOUIS BUHLE, BROOKLYN, N. Y.

WHY THE NAME, "PACIFIC"?

By A. H. PALMER



Heavy Surf at Long Beach, California, During a Wind Storm

GEOGRAPHICAL names are often misleading—notably so in the case of the Pacific Ocean. While it is true that over large areas and for periods of time the Pacific Ocean is calm, violent storms and destructive winds are frequent. In the North Pacific the western portion is a region of frequent typhoons during the summer season. Occasionally, one of these passes far out of its usual course and causes destruction off the west coast of Mexico. Such an incident occurred not long ago when two of the vessels operated by the U. S. Shipping Board were wrecked off the coast of Lower California.

It is not generally known that the most violent winds in the United States occur along the Pacific Coast. We refer to winds that blow continuously for hours at a time, and not to local and short-lived squalls such as accompany a tornado or a thunderstorm. The Government maintains three weather stations on exposed points within a few hundred feet of the Pacific Ocean. These are at Tatoosh Island and Northhead, Washington, and Point Reyes, California. Wind velocities exceeding 60 miles per hour are recorded at each of these stations during almost every month of the year. Velocities of 70 to 80 miles per hour are not uncommon at these stations. On January 27, 1916, a velocity of 104 miles per hour was recorded at Point Reyes. The significance of these figures may be realized when it is stated that a strong man finds it difficult to keep on his feet in a 60-mile gale, while no one is able to stand unsupported in a wind having a velocity of 80 miles per hour.

During winter months there is a more or less persistent storm center in the vicinity of the Aleutian Islands. Meteorologists call this "the Aleutian center of action." Detached portions of this storm move southeastward at frequent intervals across North America, giving us typical winter storms. Occasionally, one of these follows a southerly course, in which event violent winds lash the Pacific coast of the United States for days at a time.

There is nothing "pacific" about our western ocean. Those that live near the coast have come to know that the Pacific is most unpacific when aroused to fury.

SENTINELS OF THE SEA

THE first great lighthouse was one of the Seven Wonders of the Ancient World. This was the famous "Pharos" of Alexandria, Egypt. It was built in 331 B. C., and was 400 feet high. It guided mariners for 1,600 years, and it would have served its purpose well to-day, if it had lasted. Beacon lights are counted among the blessed things, but the earliest beacons were cursed devices of wreckers who used lights to lure ships at night to their destruction. The Romans, stern in their devotion to law and order, made beacons serve mankind—and they carried light with them in their conquests. There are Roman lighthouse remains at Dover, England.

The great lighthouses of the rock-bound coasts of Great Britain are famous in song and story. We have all read of the astonishing triumph of engineering in constructing the Eddystone lighthouses. The daring feat of Grace Darling will be told as long as there are children to hear the tale.

Lighthouses built on rocks, and lightships anchored in danger shoals, mark the pathway of safety to-day on all the Seven Seas. When the beam of light is clouded by mist or rain, fog signals are heard in warning—air whistles, sirens, or bells. There are 586 signals maintained by the Unites States alone.

Uncle Sam gives free light along his coasts. Just what this means is told in the figures. There are 16,324 aids to navigation distributed over 17,605 miles of coast line, of which Alaska claims nearly one half. Of these there are about 6,000 lighted aids for night navigation. With the ins and outs of the coast, the actual shore line is nearly 49,000 miles in extent, which means many points of danger to be covered. These call for about 2,000 major lights, and over 3,000 minor lights, in addition to which there are many light vessels and buoys.

Everything is done to keep the lighthouse keeper's mind engaged, for the dreary monotony has driven some into melancholy madness. Books, newspapers, magazines, phonographs, and other means of diversion are supplied by the government or by societies. The keeper's average pay is about $600.00 a year, with a living allowance of 45 cents a day. This seems small, but there is little or nothing for him to spend money on. His life is one of hard work, eternal vigilance, and severe discipline. Days may elapse before a sail or funnel is sighted, and weeks before a human voice is heard. It is just as well then that there are exacting duties to be performed at night as well as day.

Everything is kept in apple-pie order, for the inspectors are most severe in the examination of lighthouses. The inspector argues if there is dust on furniture or clothes, there may be dust on the lenses as well. The keepers of lighthouses on points of mainland have a fairly comfortable life. Their families are with them, and they see something of their fellow men. The lonely ones are those that keep the lightships, or watch isolated stations where families cannot reside.

Lighthouses always have figured in fiction. There is something heroic about the grim but ever-faithful tower, something actually personal in the service that it gives that makes a strong appeal to story writers. Robert Louis Stevenson came from a family of lighthouse designers, and was one himself. Hopkinson Smith was also a designer and builder, and the beams of the beacon light shine through a number of his stories.—*A. A. Hopkins*, "Scientific American."

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The Most Dangerous Lighthouse in the World

Without warning a sea sufficient to wash away three tons of supplies will sweep across the platform of this English coast guard beacon on Wolf Island.

"THE RAFT OF THE MEDUSA"

A GRIM story of the sea that has come down to us from a century ago. In June, 1816, the frigate *Medusa* set sail from France for the coast of Africa, bearing a hopeful band of colonial settlers. On the gentle summer waters the voyage was a joy trip—so much so that, on July 1st, when the frigate crossed the Tropic of Cancer, there was a dance on board, and the captain of the *Medusa* gave the vessel over to the command of a civilian who had seen little naval service. There was wine a-plenty and all were happy, until the *Medusa* suddenly went aground, with a crash that flung the merrymakers over the deck and brought the spars down on their heads.

The Picture That Shocked France

A detail from Jean Gericault's huge painting, "The Raft of the Medusa," which started a new realistic movement in European art

Then came the tragedy. They were miles from the coast of Africa, and there was no discipline, no master of the situation. The debonair captain disappeared. A raft was constructed 65 feet long and 20 broad, and on this *one hundred and fifty persons* frantically jammed themselves. Though the weather was calm, no barrels of food or water were loaded on the raft—only mad, wild-eyed men and women.

There were six boats, filled with sailors, and they were to pull the raft to the coast, some forty miles away. But the towline parted, and the boats rowed off, leaving the raft to its fate.

The frenzied days that followed can never be adequately described. Unfortunately wine-casks had been taken on the raft, so men lost in liquor the stern sense they needed for the tragic situation. They were raving beasts, fighting with fists and teeth as well as weapons. There were some heroes among them who tried to save the women and children, but they were few. The brutal carnage was unspeakable—in the mad delirium some men were hacked to pieces, others were thrown into the sea and drowned.

After ten days of inconceivable horror, a French brig picked up the few fragments of humanity that remained on the raft of the *Medusa*, and brought them home. When the story ended, only ten men survived.

So the shocking tragedy became history—and, a few years later, Jean Gericault (ger-ree-ko) painted it on a canvas that excited the French people to a fever of indignation. It was not the sea calamity alone that stirred Paris. It was the grim, relentless realism of Gericault's great painting. The art of France had been maintained for years on a severely simple, classic plane. Gericault did much more than depict a dire tragedy of the sea. He assailed the established canons of classic art and set up daring new standards of realism that raised a furor among the critics. Meanwhile the public gazed at the painting in shuddering wonder.

The moment that the artist chose for representation is the tenth day, when many had died of hunger and thirst, or been killed in the mad brawling. Of the raft there remain only a few timbers, ill pinned together, and carrying a mere handful of men abandoned to the agonies of starvation and exposure. The half-delirious survivors have just sighted the French vessel *Argus* that rescued them.

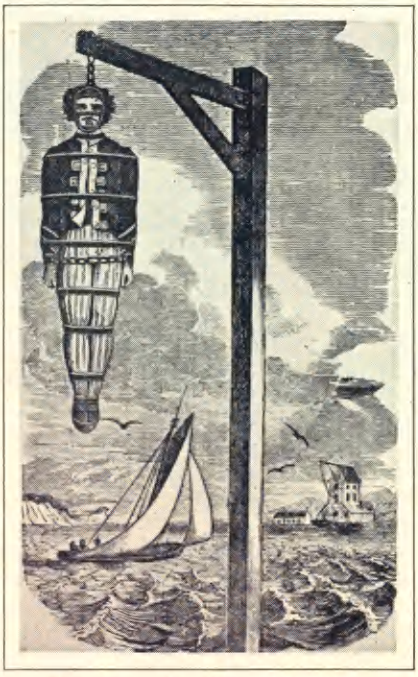
After the stir created in Paris, "The Raft of the Medusa" was exhibited for a time in London, where it created a similar sensation. Over 20,000 pounds in all were paid by the public to see it.

So, out of the sickening horror of the wreck of the *Medusa*, came a painting that started a new revolutionary movement in French art.

THE REAL CAPTAIN KIDD

EVERYBODY knows Captain Kidd, the favorite pirate of his time, author of that soul-stirring poem, "Oh, my name was Captain Kidd." He was hanged at Execution Dock, London, for his many atrocious crimes, after burying all his money in each of a dozen lonely beaches of the American coast. The world loves a thoroughgoing scoundrel and has selected Kidd as the classic example of the genuine "Bad Man" who is finally overtaken by just fate. It is time to look into the business and see how far the man deserves this high reputation as the dean of pirates.

Kidd, a Scotchman born, was a shipmaster and ship-owner who in 1695 was living in the town of New York. He had the misfortune to be closely associated with an adventuring British nobleman, Lord Bellomont, who was made governor of Massachusetts Bay, with the expectation that he would break up smuggling and piracy. Colonel Robert Livingstone of New York recommended Captain William Kidd, who happened to be in London ready to assail certain pirates who were operating in the Indian Ocean.



The Hanging of Captain Kidd

Convicted of murder and piracy he was loaded with chains and hanged at Execution Dock, London, as shown in the above woodcut by a contemporary artist.

Kidd had been a fighting sailor against the French in the West Indies, where according to the testimony of a friend his men "would have gone a pirateering and he refused it and his men seized upon his ship." The British government had no public vessel available, and therefore a dangerous plan was made that a ship should be fitted out by a group of moneyed men who put in £6,000, one-tenth of which was subscribed by Kidd. As sometimes happens in other stock companies, dummy stockholders were named which suggests that they expected the *Galley* to make money in unlawful ways. Kidd's crew was pressed for service, and therefore he crossed the ocean and raised a crew of 155 men in New York and thence proceeded to Madagascar in September, 1696.

The pirates were not at home at their usual headquarters, and a third of Kidd's crew suddenly died without giving notice. Just what happened then is still hazy. It is certain that the report reached England that Kidd, instead of capturing pirates, was robbing merchant ships right and left. He had fights with Portuguese men-of-war. He landed on the Gullibar Islands, where the natives cut the throat of one of his men and he tied a native to a tree and shot him. He had a little private war with his gunner Moore, and hit him on the head with a bucket, and Moore presently died. He undoubtedly captured a "ship of about two hundred tons, loaded with two horses, sugar, and cotton in trade there," and subsequently captured the *Quebaugh Merchant*, richly laden. Likewise he met a Portuguese ship which he relieved of some "opium, some East Indian goods, and 60 or 70 bags of rice."

He also got, by some plunder, "two hundred bales of calicoes, silks, and muslins, between 80 and 90 tons of refined sugar, 40 tons of saltpeter, and 10 tons of iron in short junks."

After desperate adventures Kidd got back to Boston, July 16, 1699, where he suddenly found himself in jail, at the instance of his pal, Bellomont. His captured ship, the *Quebaugh Merchant*, disappeared, as did certain treasure buried on Gardiner's Island. The British government sent for Kidd to come to England, where the House of Commons honored him with a special investigation. He was then put on trial before the criminal court at the Old Bailey prison, and unexpectedly and very unfairly was charged

with the murder of Moore of the bucket episode, and found guilty. The case had some political sides to it, so that he was also tried for piracy. His defense was that the vessels he captured had French passes and were therefore good prize, but the passes, which are still in existence, were taken from him and for lack of them he was condemned. One of his own men, Bradenham, swore away his life.

Every effort was made to induce him to confess, but to the last he refused to admit that he was guilty of piracy. His fortune of £6471 was forfeited to the Crown. The main proof of piracy was the great value of the cargo that he brought home, which could not have been acquired by any kind of honest trade. However, the haste and unfairness of his trial suggests that his confederates and patrons were only too glad to get rid of him and stop his mouth. There was nothing in him of the swashbuckling, blood-drinking, glass-chewing pirate of whom there were plenty in his time, men who died in the midst of murder and cruelty instead of on the gallows, like unhappy Kidd. Probably he was a pirate; certainly he was deliberately sacrificed by his partners, presumably to cover their own ill deeds.—*Albert Bushnell Hart.*

A Page of the Evidence That Hanged Captain Kidd

A part of the official inventory of treasure buried on Gardiner's Island a few miles from New York City. This was a large part of the $700,000 in loot that Kidd brought to America as the result of his East Indian operations.

THE MAN IN THE IRON MASK

FOR fourteen years the little Mediterranean island of Sainte Marguerite, off the coast of the French Riviera was the prison of the famous and mysterious character known to history as "The Man in the Iron Mask."

Who was he, what was he, and why did he wear the mask?

During the reign of the Grand Monarch, Louis XIV, Monsieur Saint Simon had charge of a French prison at Pigernol, on the border of France and Italy. While there, the Man in the Iron Mask was placed in his charge, on May 2, 1679. Five years later, Saint Simon was made jailer of the prison on the Island of Sainte Marguerite. With him he brought and kept, for a period of fourteen years, the distinguished captive whose true identity has been an unsolved mystery for centuries.

Where the Masked Man Was Imprisoned

French prison on the Island of Sainte Marguerite off the Mediterranean coast, the scene of the famous mystery of history and fiction.

He was supposed to be: (1) the natural son of Louis XIV and his first love, Louise de la Vallière, (2) the elder brother of Louis XIV, the son of Anne of Austria and the Duke of Buckingham, (3) a twin brother of Louis XIV, who looked dangerously like him, (4) a soldier of fortune named Marechiel, who conspired to assassinate the king, and (5) General de Boulonde, who compromised a campaign of Louis the Great and was imprisoned as a traitor.

His secret was guarded well. In 1698 he was brought from Ste. Marguerite to the north across France in a journey full of dramatic interest, and incarcerated in the Bastille, at Paris. This historic prison swallowed up the man of mystery.

He lived five years longer under those conditions, practically buried, though not yet dead. When life at last forsook his body, everything that he had used was destroyed. The so-called Iron Mask—which was really a black velvet one—was burned with his clothes and effects. The walls of the room he had occupied were scraped and whitewashed again; the tiles of the floor were taken up and replaced by others, in the fear that he might have concealed beneath the flooring some scrap of paper that would reveal his name to the world.

It is said that Louis XV knew the real story of the Man in the Iron Mask, but that Louis XVI was unacquainted with it. Mme. Campan, in her Memoirs of Marie Antoinette, tells us that the queen persuaded Louis XVI to have search made among the records in order to get at the truth of the matter.

In course of time the king reported to his queen that the prisoner had been a very dangerous and intriguing character and a subject of the Duke of Mantua in Italy.

There have been 72 books published on the subject and many solutions of the mystery have been offered, but judgment now rests in favor of Count Matthioli—as we get evidence from the archives of the Bastille, which are now in the Arsenal Library in Paris.

Louis XIV was, at the period in question, reaching out for more conquests, and, through his dealings with the Duke of Mantua, a brilliant young minister of the duke, Count Matthioli, became involved. In some way it was made evident to Louis XIV that Matthioli was guilty of double-dealing.

Thus it was that the young, handsome, and distinguished count, the brilliant minister of the Duke of Mantua, fell a victim to the Grand Monarch, and was condemned to pass the last twenty-four years of his life masked and in prison.

Mary Mendenhall Perkins.

JOHN THE BIRD MAN

WHEN John Burroughs was growing up, he was fond of everything boys like, but he had a consuming hunger that most boys have not—the hunger for knowledge. He longed for books and for schooling, and he worked tirelessly to get them. The first time he went to New York, as a lad of seventeen, he spent all his time in old book shops. He went home with a bag of second-hand books, purchased at the cost of meals and stage fare on the journey back to the Catskills.

Young John liked stories of travel and adventure, studies of nature, biographies of American patriots—and works on phrenology. He developed an absorbing interest in words, and was always trying to find the meaning of new ones that he read or overheard. He kept a notebook in which he copied sentences that pleased his taste. Emerson became his model for style, and he profited so well by this illustrious example that his first essay, published anonymously in the *Atlantic Monthly*, was attributed to Emerson.

"I Never Tire of Contemplating the Earth"

John Burroughs said it and added, "As I near the time when this contemplation must cease it is more and more in my thoughts." This statue, in the Toledo Museum of Art, was made by C. S. Pietro at the naturalist's home in the Catskills.

As a youth, Burroughs had unusual industry, and he played as vigorously as he worked. He was very fond of the girls, and kept a record of the dates when he paid visits to the young ladies of the neighborhood. Back in the year 1855, when he was teaching school, he met the dashing Ursula North, his future wife. Their married life lasted sixty years. She was a thrifty, ambitious woman, and made famous cherry pies.

In his early years Burroughs liked best "to fish, recite poetry, and crack jokes." The study of birds engrossed him. His lifelong ardor for bird study gave him the name "John o' Birds," and "The Bird Man."

Like his friend John Muir, the California naturalist, the Bird Man was a successful fruit grower. He used to say that he made enough on his fruit farm to write when and what he pleased. At his home on the Hudson, forty tons of grapes was his annual harvest for many years.

As householder and housebuilder, the great nature-writer had simple tastes. He liked the bark left on the beams of rafters, and loved walls and furniture of natural wood. With his own hands he cut down trees, and on the hillside above the Hudson built the cabin called "Slabsides," which became a place of pilgrimage for great men and humble.

Next to birds and children, John Burroughs liked dogs best, and they liked him. On his home grounds he watched with tender memory over a little burying-ground where he had laid away several of his dog companions.

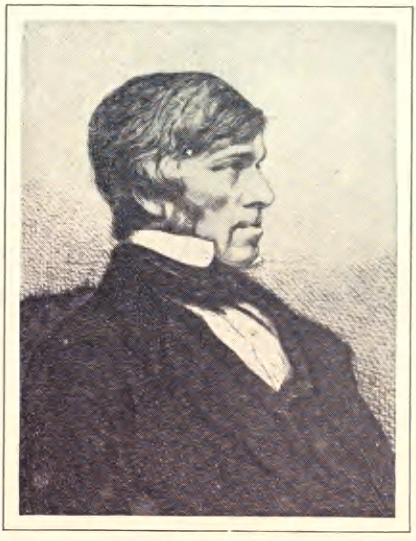
"Nature Fakers" always roused the ire of Burroughs. He had no patience with writers who disguised fiction as natural history. A characteristic that grew upon him as he traveled about America and Europe was a distaste for nature in a spectacular mood. Geysers bored him, and he quickly tired of showy sights, like volcanoes. The miracle of a wild flower's beauty appealed to him more. In the presence of the Grand Canyon, however, he stood mute and reverent. He called it "The Divine Abyss."

JOHN O'LONDON SAYS:

JOHN O'LONDON, a British editor whose publication is devoted to literature, science and art, prints many anecdotes that reveal the human side of great men. Here are some of his most interesting ones:

VOLTAIRE'S GET-RICH-QUICK SCHEME

Voltaire, the famous French satirical writer, was worth $500,000 at forty. But he did not make this money from books. Most of it was made by lending money to needy noblemen. Voltaire would lend an expectant heir to an estate a large sum if the heir would agree to pay him ten per cent interest on the amount so long as either party to the agreement lived. The heir would not be required, nor allowed, to pay off the principal; the deal was ended only when either he or Voltaire died. Voltaire picked only younger men, and had no difficulty getting clients because of his consumptive appearance. It is said that when a prospective borrower wavered he could evolve a wheezy cough that always closed the deal. The scheme was immensely successful for Voltaire.



Thomas Carlyle

As he appeared at the time his manuscript for the first book of his "French Revolution" was burned by a careless servant.

HERBERT SPENCER'S EAR MUFFS

When Herbert Spencer, the great English philosopher, wished to shut out the noises of his London boarding house, that he might be undisturbed in his thinking, he slipped a pair of ear muffs over his ears. They were held in place with a spring. At the dinner table, when conversation took a turn in which he had no interest, he would excuse himself to his nearest neighbor and snap on his muffs. Occasionally at concerts or lectures, when he became more interested in his thoughts than the performance, he would adjust his device.

KANT AND HIS FIVE FEET

Emmanuel Kant, the German philosopher, weighed but five pounds at birth and was pitiably weak. He had a big, bulging head, thin legs, a weak chest and one shoulder was much higher than the other. He was extremely stubborn.

Once, one of his calumniators exclaimed: "He isn't five feet high!"

"Liar!" came the shrill voice of the philosopher, who had accidentally overheard him, "I am exactly five feet." And he drew himself up and struck the ground defiantly with his cane.

HOW TURNER STUDIED NATURE

Dr. J. M. Graves, an English writer and traveler, is credited with another of the hundreds of stories about Turner, the famous English artist. Turner was known for his remarkable capacity for work and eccentric habits. Traveling in a public carriage in Switzerland, Dr. Graves was surprised to see the man next to him produce a notebook and write in it with tremendous rapidity. From time to time, the writer would stare at the clouds or the mountains. Dr. Graves' mystification was deepened by the man's appearance; he was dressed as a sailor. Later, the doctor saw that his companion was drawing, and that it was his habit to sketch constantly while traveling. The doctor and the artist became friends—a rare thing for Turner—but it was not until some weeks later, when he had reached Rome, that he learned that his companion was a famous artist.

THE MUMMY AND THE CURSE

As interesting as similar stories of fiction is the experience of the prominent Meux family with the Egyptian mummy, Neo-Amsu, now in the British Museum. On the mummy was written:

If any person of any foreign country, whether he be black man or Ethiopian, or Syrian, carry away this

writing, or it be stolen by a thief, then whoever does this no offering shall be presented to their souls, they shall never enjoy a draught of cold water, they shall never more breathe the air, no son and no daughter shall arise from their seed, their names shall be remembered no longer upon earth, and most assuredly they shall never see the beams of the Disc (the Sun-God).

In 1886, Ingram, the man that bought the mummy from an Egyptian dealer, was killed hunting elephants in Africa. In 1900, Sir Henry Meux died childless and the baronetcy became extinct. Lady Meux bequeathed the mummy to the British Museum.

MUSIC FROM THE TEA-KETTLE

Camille Saint-Saens, the French composer, best known for his opera, "Samson and Delilah," heard music in the commonest noises when a child. He would plant himself in front of a clock to hear it strike. Seated on a small stool before the fire he used to wait for the tea-kettle to sing.

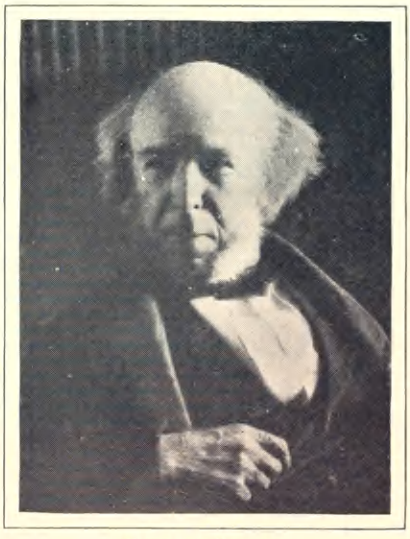
In a book of recollections, Saint-Saens says that his friend, Pasteur, the great bacteriologist, was the object of public wrath when he first announced his new treatment for disease. A mass meeting was held to protest against his serum discoveries, at which an eminent man said: "*Scientific questions should be settled by the people.*"

BAD LUCK NO OBSTACLE TO CARLYLE

Thomas Carlyle came to London in 1835 with $1,000 and the determination to conquer Fortune with his pen. He worked five months writing his "French Revolution." When finished, he wrote in his diary: "Soul and body very sick." His capital was nearly exhausted. He lent the manuscript to his friend, John Stuart Mill, the famous economist, who was to make some critical notes on it. Later, while Carlyle was sitting with his wife after a hard day's work, Mill, pale and agitated, broke in upon him with the announcement that the manuscript had been accidentally burnt by a careless servant. Carlyle refused Mill's offer of money and, making every effort to conceal from him what a knock-down blow the news had been, set himself to rewrite the book. Much of his material, collected with painstaking effort, had been destroyed; the data had to be dug out again. Day after day he sat at his desk dispirited and discouraged; but, doggedly staying at it, he was finally able to restore the work.

ENGLAND'S MOST OBSTINATE MAN

Recently a book of William Prynne's brought a high price in London. Prynne was a Puritan writer of the seventeenth century whom torture could not intimidate. He wrote a book, "Histrio-Mastix, the Players' Scourge," in which he attacked play acting, particularly by women. Unfortunately for Prynne, Queen Henrietta Maria had just taken part in a play and he was accused of denouncing her. His ears were cut off, his book burned by the hangman and he was sentenced to life imprisonment in the Tower of London. While in prison he wrote two pamphlets against the English bishops, and for this the stumps of his ears, which had been left on the previous occasion, were cut off, his cheeks branded, and a fine of $25,000 assessed. He was later released from prison, by warrant of the House of Commons, served two years more as the result of a controversy and was appointed Keeper of the Tower records by Charles II, which post he held until his death in 1669.



Herbert Spencer

He undertook to know everything and nearly succeeded. This picture was one of the last taken of him, when he was about 78.

ARTISTS ARE LONG-LIVED

Artists, particularly members of the British Royal Academy, are apparently long-lived. Gainsborough was 61 when he died; Raeburn, 67; Reynolds, 69; Turner, 76; Sir E. J. Poynter, 83; G. F. Watts, 83; Today there are ten English painters and one sculptor over 70 and three painters and two architects aged, respectively, 81, 82, 85, 86, and 90, all active and able to work.

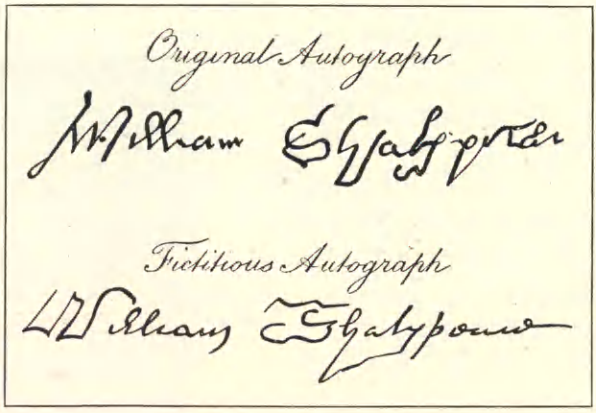
THE BOY THAT FAKED SHAKESPEARE

A SMART individual said to Charles Lamb, "I could write Shakespeare plays if I had a mind to." "Yes," answered the gentle Lamb, "so could I—if I had the *mind* to."

About a century ago young William H. Ireland "had a mind" to write a Shakespeare play—*and he did it.* He was only 17 years old at the time. He produced a Shakespeare tragedy entitled "Vortigern and Rowena," and it was produced in Drury Lane Theatre, in 1796, with John Kemble and a number of the famous actors of the time in the cast.

Young Ireland enjoyed rare advantages for a literary forger's career. His father was a dealer in old books in London, and the boy had free run of the shop. There he found manuscripts and precious autographs. He amused himself imitating old signatures. He tore out fly-leaves of musty volumes to get paper centuries old and concocted an ink that reproduced the effect of faded writing. Then the big idea lodged in his mind. Old Samuel Ireland was an ardent worshiper of Shakespeare, and was ever looking for some bit of writing of the great poet. This eager desire worked on the fertile mind of his son. "If he wants Shakespeare," thought the boy, "why shouldn't I make him happy? The materials are right at hand."

The boy started cautiously. His first venture was a letter from Queen Elizabeth to Shakespeare, which he claimed to have discovered in the house of a gentleman who had many old manuscripts, but insisted on keeping his name secret. Ireland Senior was delighted—called in the experts, and laid his treasure before them. The wise men "fell for" the hoax. Then young Ireland grew bolder and produced a letter of Shakespeare's. The experts swallowed that also. A few held out. Dr. Malone, the leading Shakespearian scholar of the day, was skeptical and remained so to the end. But many cultivated men greeted the documents as genuine. Young Ireland was then kept busy making Shakespeare manuscripts, and, as time passed, the pressure became greater. The boy had not only to produce more important documents to feed the demand, but he had to manufacture more lies about the origin of the documents. Every lie called for two or three more to hold the fabric of falsehood together.



This Writing Fooled Experts
A Shakespeare signature, and one forged by Ireland.

Finally Ireland Senior cried for a Shakespeare play—and, of course, he got it. What else could the boy do? The amazing part of it was that young Ireland not only produced a "Shakespeare play" which was accepted and performed, but, apart from the fact that it was a base forgery, it was really a creditable composition. If it hadn't been so, it never would have been produced before the distinguished audience that greeted it. As a matter of fact, if the great actor, John Kemble—who did not believe in the play—had not "horsed" several lines, and so turned the tragedy into ridicule, the play might have run on its merits for a time. At least W. H. Ireland tells us so in his "Confessions."

The crash came shortly after the tragic drama had reached its tragic ending. One by one the flimsy bits that held the hoax together loosened and fell apart, and very soon the whole false structure was revealed. Dr. Malone triumphed, and young Ireland, who had gifts that might have won him fame, went down to disgrace and dishonor. There was only one grim consolation that he could draw from the bitter experience. He certainly got Dr. Samuel Parr, James Boswell (Johnson's Boswell), and several other complacent and self-satisfied "literary beacons" of the day in a bad hole, and made them supremely ridiculous. W. D. M.

THE LINER SPEAKS TO THE FISHERMAN

By N. T. GRANLUND

At the end of a bitter winter day of storm on the steamer lanes
A giant liner plows along as the gray light slowly wanes.

She seems in the light like a thing alive, like a mighty human soul
With a purpose in every forward leap and in every lurch and roll.

To me it seems that the liner spies, in the thick of the gathering gloom,
A fisherman, tossed like a battered ship where the mighty billows boom.

She's a little ship, scarce fifty feet, a speck on the ocean's crest,
As she wallows down the side of a wave, and gallantly mounts its crest.

It seems that out of the bitter night I can hear that liner speak
With a human voice in the sullen groans 'mid the tempest's ghostly shriek:

"I've seen you many a time and oft, as I sail on my beaten path,
As you loafed along when the sea was calm, or defied the Storm God's wrath.

"I, in the pride of my mighty bulk, have been pounded, wracked and torn
By the hellish hate of the God of Winds, who rides on the winter storm.

"From keel to bridge is ninety feet, yet seas have swept me clean;
The ocean has climbed my giant sides with tons of water, green.

"I've fought through gales which chill men's souls, have wrenched their hearts with fright,
Through the winter days of awful storm, through the hell of a winter night.

"And yet, through it all, I have seen YOU here, a tiny wooden ship,
Out here where the Storm God rules the waves, and the sea gulls wheel and dip.

"I've seen you fish from your tiny boats, in weather fair and foul
You've hauled your trawls and set your lines in the midst of the tempest's howl.

"You give up all that life holds dear, you're never warm, nor dry,
You drink of life to the bitter dregs, and now I ask you—Why?"

It seemed to me that the fisherman spoke, with the voice of her creaking masts
And the eerie shriek of the upper rig, as it strained to the mighty blasts:

"You ask me why I come out here, where the ceaseless billows moan,
I come because I'm driven by men who'd go to hell for their own.

"And hell it is, a hell of work, of brutal labor and pain,
A hell of toil, such as none can know, yet you'll not hear them complain.

"They risk their lives for their kids and wives in their tiny homes ashore,
They have to provide for them, and so they risk the Storm King's roar.

"Love of their own makes them take to sea, makes them work as no others can work,
Braving the deep, fair weather or foul, with never a thought to shirk.

"The love that drives them forth to sea is the moving force of the age,
It isn't new, for you'll find it true, it's written on history's page.

"The folks on land don't understand, and never have understood,
That men like these must starve and freeze, to get them fish for food.

"There's never a rest for the sore oppressed, the men of the fishing fleet,
Battered and worn, their faces torn by the stinging wintry sleet.

"Their happiness comes when the hold is full and they start on the long run home,
And they crack on sail till the worn lee rail goes down in the hissing foam.

"I've rushed along through the gales at night, with a tempest shrieking past,
And heard them sing, and their laughter ring, as they watched the bending mast.

"For then, at last, they were rushing fast on the way that led toward home,
With the thrill that comes to the stalwart ones that bring joy to their own."

THE OPEN LETTER

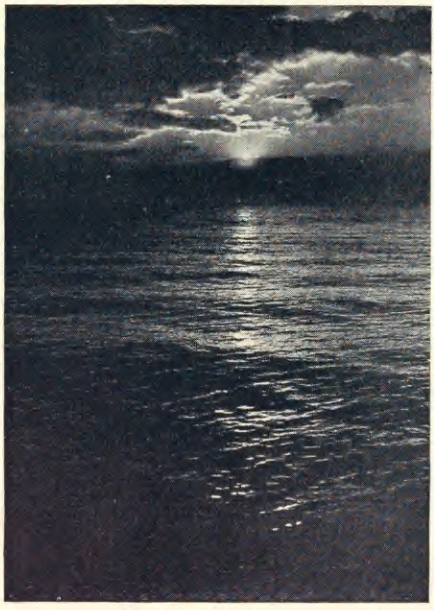
All of us feel, in some measure, the spell of the sea. Even when we dread it, the ocean compels our devotion. Through centuries of tragic experience we have come to know the greediness of the engulfing flood, and the terrors in store for those that tempt the sea in evil weather—and yet we love to play along its shores; and we are ever ready to take the chances of its moods, by sail or steam, risking the dangers of the deep again and again, in the belief, each time, that the way of the great waters will be safe. It never was safe, and it isn't safe now—and it never will be as far as we know.

★ ★ ★

The latest and most highly perfected marine equipments of the present day have not changed the meaning of Lord Byron's lines:

Ten thousand fleets sweep over thee in vain.
Man marks the earth with ruin: his control stops with the shore.

In spite of modern devices vessels innumerable still go down to watery graves. The superbly appointed and soundly protected *Titanic* struck an iceberg, and sank quickly with a tragic loss of life. The luxurious giant ship *Lusitania* succumbed to the mortal wound of a submarine—and submarines sink readily under the blow of a destroyer, or the bombing of an airplane. The best craft that man can contrive goes to sea, and, oftentimes, never comes back again. The values taken in toll by the waters for a year's navigation would finance a nation. Vast fortunes are sunk—and countless lives are lost. And, over all, rolls sullenly "Old Ocean's gray and melancholy waste."



The Slumbering Sea

★ ★ ★

What then is the spell of the sea—and why has it such an irresistible attraction for us? Is it because, in a cosmic sense, it is our mother?

Scientists tell us that the ocean is the womb of organic life, and that we have come from the spawn of the sea. John C. Van Dyke describes in this number of The Mentor the "opalescent mucus" that drifts in skeins through the ocean water—the lowest form of life. The Prince of Monaco, the foremost ocean student of to-day, tells us that the ocean forms a bond between all peoples, a bond which all instinctively recognize, because in the depths of the sea lies the center of organic life, the center from which *all* organic life, in that great beginning for us, came; just as the worlds that move in infinite space have issued from the force of a great unknown and incomprehensible power and will that we call the Creator —the power that has determined the principle of fertility and the universal laws of life and death.

Perhaps then the secret of the fascination of the great deep, for us, lies in an unconscious feeling of our kinship as children of the sea.

W. D. Moffat

EDITOR

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FAMOUS SPIES IN AMERICAN HISTORY

Nathan Hale's Army Diary, Camp Basket, and Powder Horn

Now in possession of the Connecticut Historical Society, Hartford, Conn. Specially photographed for The Mentor, by permission of the Society

Nathan Hale Statue, City Hall Park, New York

This beautiful statue was designed by Frederick MacMonnies, and erected in 1893. Our photograph shows the statue in its original position southwest of the City Hall, facing Broadway—a place of advantage under a spreading elm, and surrounded by flowers. Excavations made it necessary to remove the statue. It now stands nearer the City Hall, and has been deprived of its picturesque setting.

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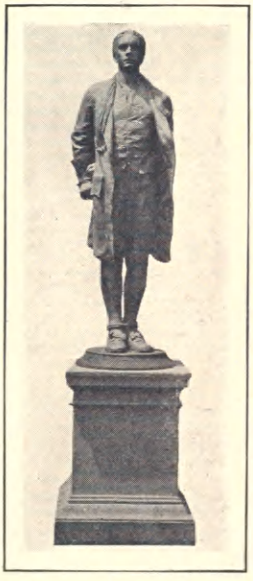
FAMOUS SPIES IN AMERICAN HISTORY

By GEORGE S. BRYAN

"HANGED as a spy!" Thus ends many a story of quick intelligence, ready wit, high courage, and supreme devotion. "Hanged," not because spying is criminal—it has always been sanctioned by codes of war—but to prevent others from undertaking it. "As a spy"—that is, one who secretly, or under false pretenses, enters the enemy's lines to seek information for hostile purposes.

"The authorized practices of war," said Alexander Hamilton, "are the satires of human nature." War overrides the laws of peace and the customs of peaceful society. War employs many deceptions—feigned movements, camouflaged batteries, false dispatches. Spying is but a specialized form of war deception.



Nathan Hale, by Bela Pratt

This statue stands on the Yale Campus in front of the old dormitory in which Hale roomed as a student

Of the character of a man that does espionage work, Nathan Hale, America's foremost spy, said, "I wish to be useful, and every kind of service, necessary to the public good, becomes honorable by being necessary."

The first important American spy in the first war of his country, Nathan Hale, is naturally the best-known to his countrymen, but many of the tales about him are pure legend.

Nathan Hale was a mere youth, just past 21, when he gave up his life. No authentic portrait of him exists. Recently, his profile, scratched on a door, was found in the Hale

Union Schoolhouse in New London, Conn.

In which Nathan Hale taught from March, 1774, until he enlisted in the spring of 1775. This building was dedicated as a memorial on June 17, 1901, by the Sons of the American Revolution, and is now in the care of the Daughters of the American Revolution

house at Coventry, Connecticut. It had been painted over and forgotten until uncovered when the house was being re-decorated. The picture is too inadequate, however, to give an artist Hale's likeness. Hale's fiancée, Alice Ripley Lawrence, had an ivory miniature of him; it was lost.

Three descriptions of Hale have been handed down by persons that knew him—Lieutenant Bostwick of Hale's regiment, Alice Ripley Lawrence, and Dr. Æneas Munson, a surgeon in the Continental Army, whom Hale had visited often at Coventry, agree in the main as to his appearance. Dr. Munson said that he was "the most manly man I ever met." He was almost six feet tall, well-proportioned, broad-chested, had a fine complexion and benign expression. He was an athlete and, in his college days, easily leaped out of one hogshead into another standing beside it.

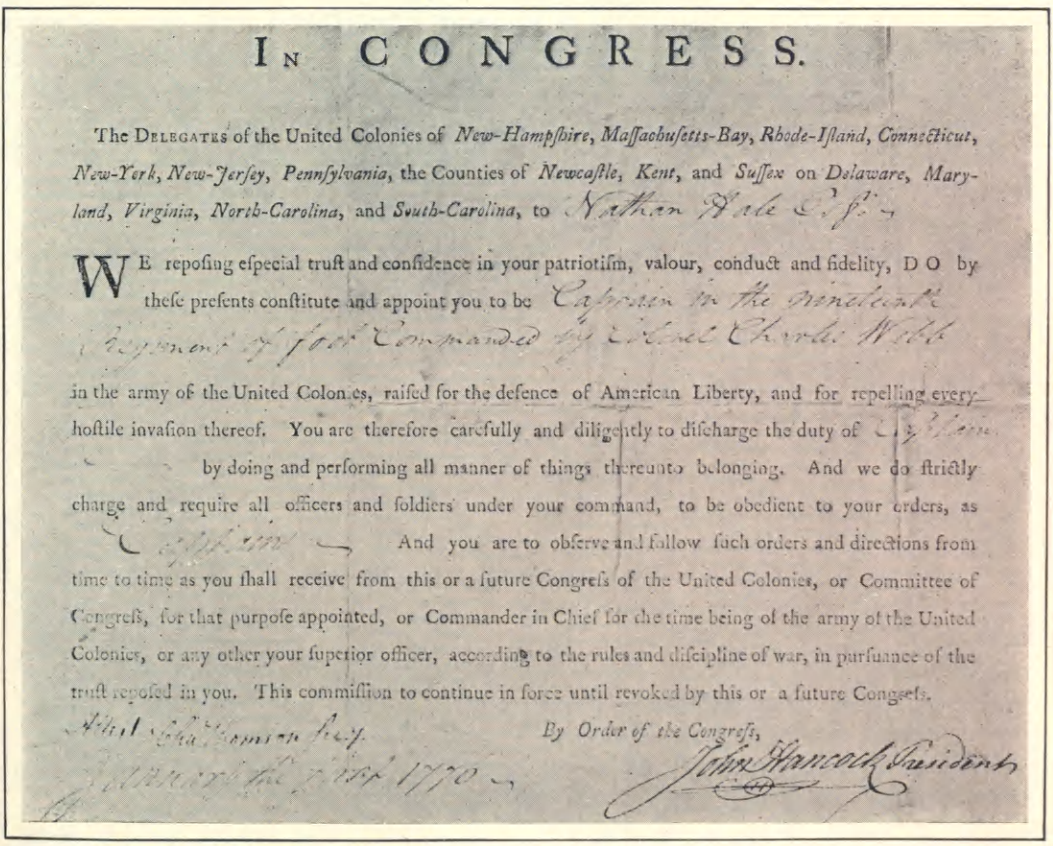
Nathan Hale Memorial Monument
Erected at South Coventry, Conn., in 1846

At the outbreak of the American Revolution, Hale, who had just been graduated from Yale and was teaching school at New London, was com-

missioned a captain in the Continental Army, and took part in the fighting around Boston. In the troubled days after the battle of Long Island, Washington was in great need of information concerning the enemy's movements. No soldier could be asked to spy, but volunteered service was asked for, accepted, and used. Hale volunteered.

Disguised as a Dutch school teacher in a "plain suit of citizen's brown clothes with a round broad-brimmed hat," he crossed from Norwalk, Connecticut, to the shore of Huntingdon Bay, Long Island, and disappeared within the British lines. For six or seven days he worked on his mission unsuspected. One of the eight memorials to Hale, at Huntingdon, fixes the place of his capture there, but the evidence is that he was caught at Harlem trying to pass the British outposts.

Taken before General Howe, Hale fully confessed his identity and purpose. He was not tried, but, after examination, sentenced to death. Marched to the Dove Tavern—not Colonel Rutger's orchard, as some stories have it—on the line of the present Third Avenue, New York, somewhere between Sixty-sixth and Seventy-eighth streets, he was hanged in front of an artillery park, September 22, 1776. Captain Montressor, a British engineer officer and aid-de-camp to Howe, under a flag of truce, gave the story of the execution to three American officers—Captain Al-



IN CONGRESS.

The DELEGATES of the United Colonies of *New-Hampſhire, Maſſachuſetts-Bay, Rhode-Iſland, Connecticut, New-York, New-Jerſey, Pennſylvania*, the Counties of *Newcaſtle, Kent*, and *Suſſex* on *Delaware, Maryland, Virginia, North-Carolina*, and *South-Carolina*, to Nathan Hale Esq.

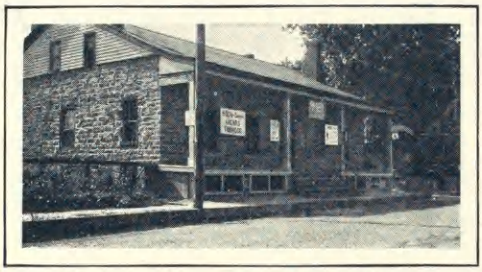
WE repoſing eſpecial truſt and confidence in your patriotiſm, valour, conduct and fidelity, DO by theſe preſents conſtitute and appoint you to be Captain in the Nineteenth Regiment of foot Commanded by Colonel Charles Webb in the army of the United Colonies, raiſed for the defence of American Liberty, and for repelling every hoſtile invaſion thereof. You are therefore carefully and diligently to diſcharge the duty of Captain by doing and performing all manner of things thereunto belonging. And we do ſtrictly charge and require all officers and ſoldiers under your command, to be obedient to your orders, as Captain. And you are to obſerve and follow ſuch orders and directions from time to time as you ſhall receive from this or a future Congreſs of the United Colonies, or Committee of Congreſs, for that purpoſe appointed, or Commander in Chief for the time being of the army of the United Colonies, or any other your ſuperior officer, according to the rules and diſcipline of war, in purſuance of the truſt repoſed in you. This commiſſion to continue in force until revoked by this or a future Congreſs.

Dated at Philadelphia the first day of January 1776.

By Order of the Congreſs,

John Hancock President

Nathan Hale's Commission as Captain in the Nineteenth Regiment Infantry



Old Stone House at Tappan, N. Y.
Where Major André was held after his capture

exander Hamilton, Captain William Hull, and General Israel Putnam. Hull, a confidential friend of Hale, recorded Montressor's message and saved for the country one of the most treasured speeches of the Revolution, Hale's last words: "I only regret that I have but one life to lose for my country."

Hale was the only commissioned officer of the American force, and Major John André of the British, to die as a spy in the Revolutionary War. Because of his winning personality and the extraordinary circumstances of his capture, André is second only to Hale as a romantic figure. "Cher Jean," as he was known to his friends and family, was a handsome man and one of the most popular officers in the British army in America. He was talented as a writer and musician; one of his parodies appeared in New York on the day of his capture. André came to America after having been disappointed in his desire to marry Honora Sneyd, a literary young woman of Lichfield, England. He was captured early in the war, and when stripped of his belongings, saved a miniature of Honora by concealing it in his mouth.

Romantic stories cluster naturally about André's name. Before leaving England to join his regiment, André visited Lichfield. Miss Anna Seward, with whom he had carried on a literary correspondence, arranged to have him meet a friend, a Mr. Cunningham. The night before the meeting Cunningham dreamed that he saw a stranger riding through a great wood seized and carried off by three men. He awoke, according to the story, and upon getting to sleep again, dreamed that he saw the same man hanged in the sight of a multitude near a large city. He was astounded upon meeting André to see that the young officer was the man of his dreams. Another favorite story tells of two young ladies on their way

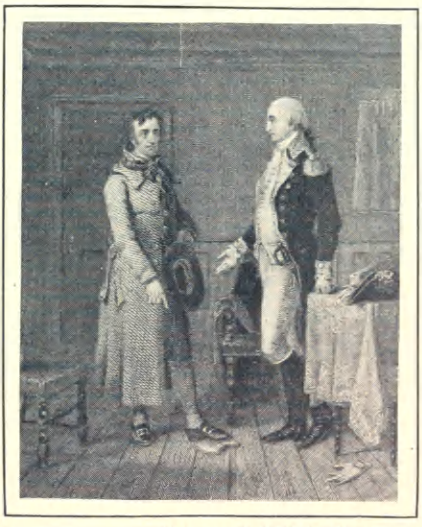
Major John André
Born in London, 1751; executed at Tappan, October 2, 1780

Pen and ink sketch of himself made by Major André the day before his execution. Reproduced by special permission, from original in possession of Yale University

to dine with Washington at an old manor house that André had occupied. They were terrified to see an apparition of a British officer, whom they recognized as André, hanging in the trees surrounding the house. Still another is that of André's sister, who was said to have dreamed that he was hanged as a spy. When the news of his fate reached her she discovered that his execution had taken place on the day preceding her dream.

André had become adjutant-general on Sir Henry Clinton's staff when Major General Benedict Arnold, in command at West Point, made overtures to the British looking toward the surrender of that strategically important American stronghold, and the young adjutant was picked to parley with Arnold. Clinton's choice evidences the high regard he had for André, for his greatest chance of ending the war lay in the success of the negotiations with Arnold.

John Paulding
Who, with two others, captured Major André

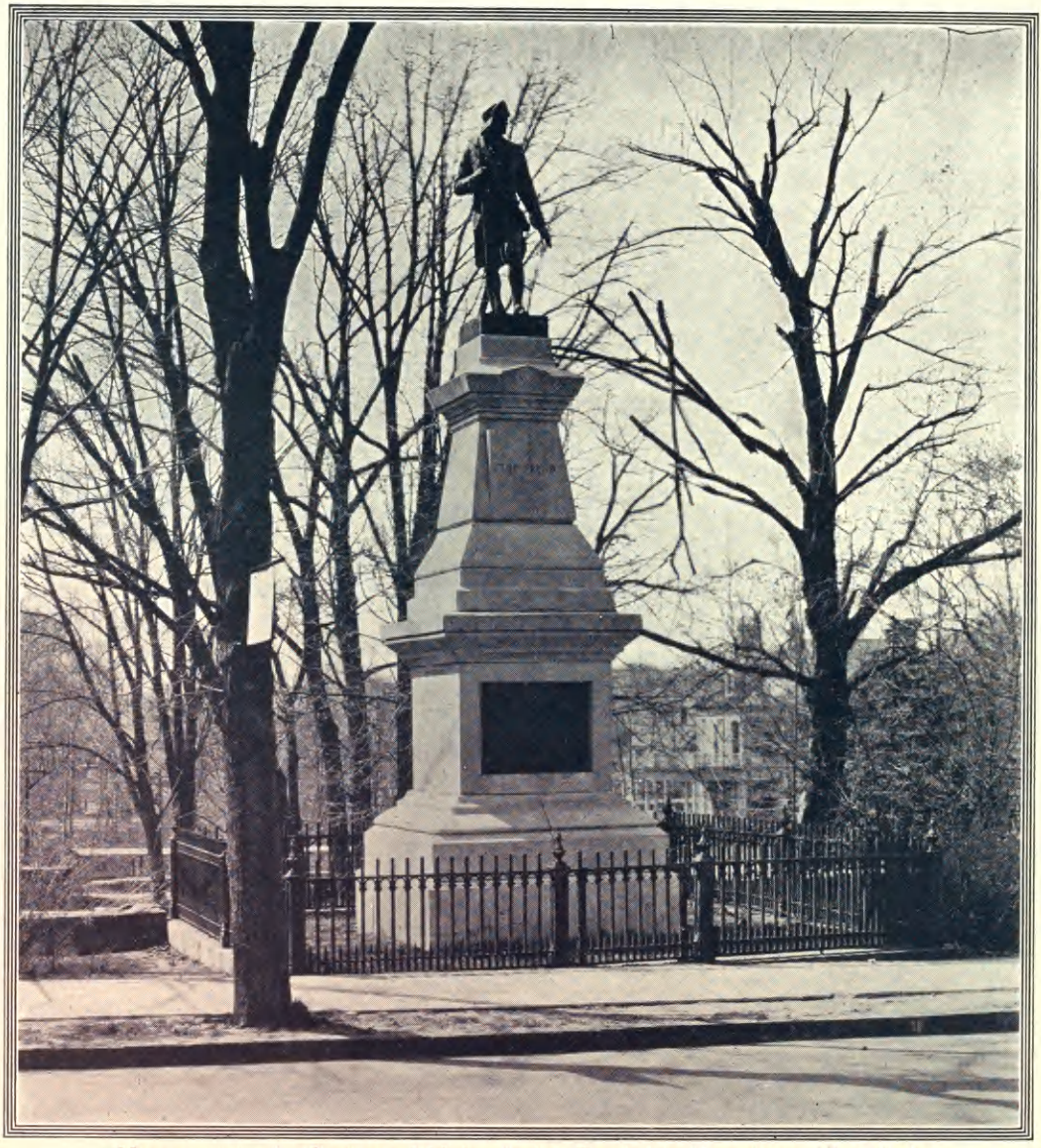


Harvey Birch Refuses the Money Offered by George Washington
A scene from Cooper's novel, "The Spy," of which Birch is the hero

André was taken up the Hudson River on the British ship *Vulture*. He was to meet Arnold two miles below Haverstraw, outside the American lines. He went in uniform, under the name "John Anderson." He carried a safe-conduct from Arnold, but no flag of truce. At daybreak, he passed the American lines and met Arnold in a house at Haverstraw where plans were given to him for the surrender of the fort. Meanwhile, the *Vulture*, having been fired on by American artillery, dropped down the stream without him. André then disguised himself — a fatal mistake — crossed the Hudson at dusk, and started for New York.

Benedict Arnold
Brilliant officer—and traitor

On the following morning André was halted near Tarrytown by three men,



Monument to the Captors of Major André, Erected in Tarrytown, New York

John Paulding, David Williams, and Isaac Van Wart. None was in military service, but, according to the best evidence, bent only upon robbery. Williams and Van Wart were already known as marauders and Van Wart was suspected of being a Tory by his neighbors. Attracted by his handsome white-topped boots they took him to a large tulip tree, stripped him, and in his stockings found the papers that convicted him. Paulding alone could read. Even so, it appears, they would have let André go had he had sufficient money with him to satisfy his captors. After stripping him of his belongings, André's captors turned him over to Lieutenant Colonel Jameson at Northcastle.

While the court-martial was deliberating, almost four years to a day after Nathan Hale's execution, André

questioned Major Tallmadge, his custodian, as to his probable fate. Tallmadge, a close friend of Nathan Hale, recalled the American's fate. "Surely," said André, "you don't consider his case and mine alike?" "Precisely," was the answer. And so it was considered. The court-martial ruled that André must die. Hale had been marched out without ceremony by the provost guard; five hundred infantrymen in hollow square escorted André to the gibbet. In sight of the field officers, André was hanged—in the twenty-ninth year of his life. "Never, perhaps, did any man suffer death with more justice or deserve it less," wrote Alexander Hamilton. This was the feeling of most American officers. High feeling was aroused in the English army over André's execution, but a British board of officers held that it was entirely just. His body was removed to Westminster Abbey in 1821, and an American has placed a statue over the spot where it lay at Tappan, New York.

Congress, which would not spend a cent on Nathan Hale's memory, gave a silver medal to each of André's captors and a pension of $200 a month for life. The state of New York gave each a farm.

Other officers of the Revolutionary War were engaged in espionage. During the Saratoga campaign, Captain Thomas Scott of the British Army successfully passed in disguise through the American lines with a message from Burgoyne to Clinton. Major William Edmonston, stationed in Canada, spied successfully for the British general Howe.

Emma Edmonds, Famous Woman Spy of the Civil War
The right-hand picture shows Emma Edmonds, disguised as a negro worker, in the Confederate lines

General Frederick Funston
Who ran down and captured Aguinaldo in the Philippines in March, 1901

Civilians and private soldiers were used as spies by both armies. Four days after the Americans occupied Fort Montgomery, Daniel Taylor, a British spy, was brought before General George Clinton of the Continental Army. Taylor had been seen to swallow a silver bullet, which, when recovered with an emetic, was found to contain a message from Sir Henry Clinton to Burgoyne. "Out of thy own mouth shalt thou be condemned," said the American general and Taylor was forthwith hanged. Emissaries of the British to disaffected Pennsylvania troops were executed. At Yorktown, Lafayette had two spies. One of them, a shrewd, illiterate old negro, was received as a runaway by Cornwallis who, in turn, used him for spy-work and received from him, regularly, selected misinformation. The second, Morgan of the New Jersey line, entered the British camp, enlisted, accomplished his purpose, and brought back five British deserters and a captured Hessian. He refused Lafayette's offer of either money or a sergeancy.

Enoch Crosby, about whose exploits Cooper wrote his novel "The Spy," was, strictly speaking, a secret agent. Cooper never met Crosby; nor did he know his name, but obtained his information from John Jay, who had employed Crosby while chairman of the committee of safety for the colony of New York. Barnum afterward exhibited Crosby as the original "Harvey Birch" of Cooper's book. Crosby was employed to report disaffection in the Continental ranks and in the neutral territory of Westchester County, New York. A shoemaker by trade, he had access to many homes in that capacity and for years was thought by his friends to have been a Tory.

A woman was the most dramatic figure of the Civil War spies. She was Emma Edmonds, who early had an ambition to be a foreign missionary. At the start of the war she became a nurse with the Army of the Potomac; later she was in the hospitals, and when headquarters wanted a spy she volunteered. Eleven times she entered the Confederate lines in disguise and was not caught. Once she went as a negro youth and deceived the negroes with whom she worked. She brought back plans of fortifications and such scraps of military intelligence as she could pick up. As a negress, she was sent to Confederate headquarters to cook, and there obtained valuable papers.

During Pope's Virginia campaign, she made three visits to the enemy in ten days and returned each time with valuable information.

A once celebrated spy case of the Civil War was that of Capt. John Y. Beall, Confederate Navy, a native of Virginia and a graduate of its university. He had privateered on the Chesapeake and the Potomac, and already had been near the gallows; for he had been captured and put in irons. He afterward made his way to Canada, and there laid plans to free the 2,500 Confederate prisoners on Johnson's Island, at the mouth of Sandusky harbor; seize the ship *Michigan*, which guarded the island, the only United States war vessel on the Great Lakes; put a Confederate crew aboard; and proceed to set fire to Sandusky, Cleveland, and Buffalo. Arms and horses were to be supplied to the bulk of the ex-prisoners, who then would break through Ohio and West Virginia into Virginia. The plot failed and Beall escaped.

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Victor Blue
Who rendered valuable secret service in the Spanish-American War

In less than three months after that Beall made three unsuccessful attempts—variously explained—to derail trains between Dunkirk and Buffalo. When arrested at Niagara Falls, New York, he gave the name "W. W. Baker" and said he was an escaped Confederate prisoner. Tried before a military commission, he was found guilty of having acted as both a spy and a guerrilla and was hanged on Governor's Island in New York harbor.

Of all Civil War spies probably the ablest was Timothy Webster. At the beginning of 1861, Webster was the star operative of Allan Pinkerton's detective agency. He was about forty, absolutely fearless, remarkably ingenious, thoroughly reliable. "I have never," wrote Pinkerton, "met one who could more readily and agreeably adapt himself to circumstances." The plot to assassinate Lincoln in Baltimore, as he was on the way to his first inauguration, was frustrated largely by Webster, who joined the conspirators and thus fully learned their plans. Through acquaintance with these conspirators, who fled to escape arrest and supposed him to have done likewise, Webster later found his first means of entering the enemy's lines.

Pinkerton, as "Major E. J. Allen," developed and directed the Federal secret service; and of that service Webster at once became chief spy. Almost from the start, confidential

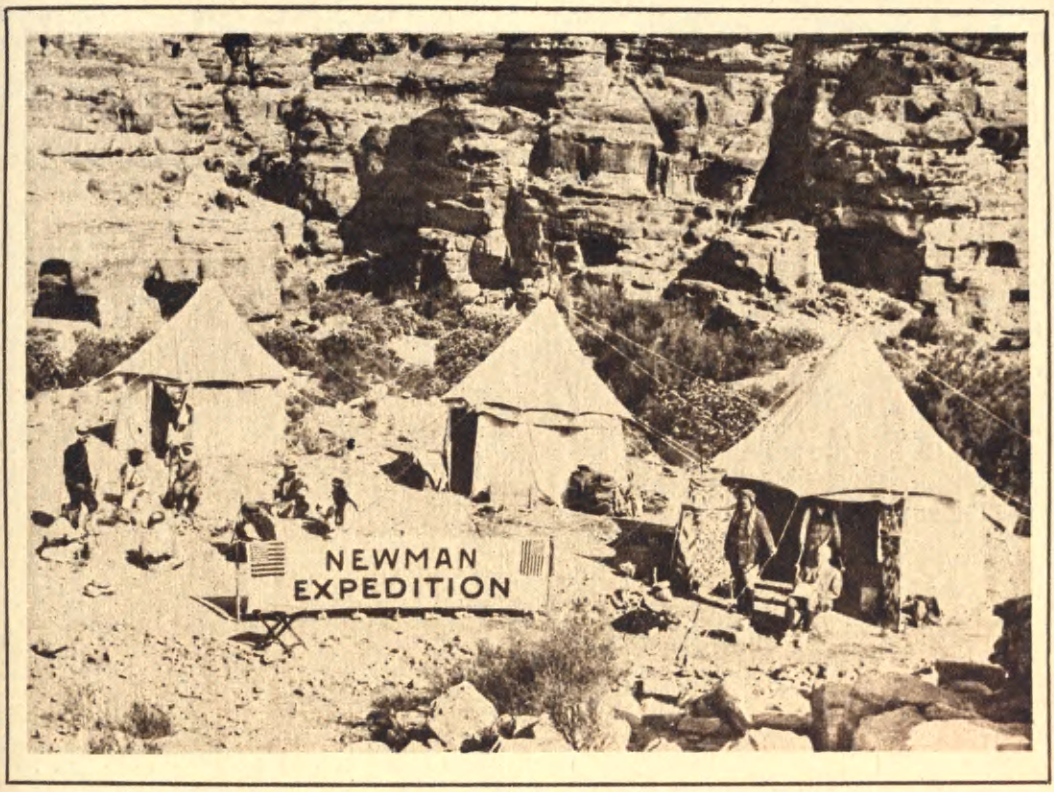
letters to and from Southern residents were entrusted to him; gradually he won such favor that he was the bearer of important dispatches, all of which passed, of course, through "Major Allen's" headquarters. He received in person the hearty congratulations of Judah P. Benjamin, Confederate secretary of war, who issued to him passports that gave him access anywhere in Southern territory. Wherever he went he was jotting down items of useful intelligence. So cool, so audacious was this man that after countless hazards he was betrayed only through the indiscretions of two Federal associates—and even then he might have escaped had he not been confined to his room in Richmond by illness resulting from exposure in the course of duty. He was hanged as a spy at Camp Lee.

Timothy Webster
Chief spy of the Pinkerton Secret Service in the Civil War

In more recent years we have Major Rowan, who penetrated secretly the wilds of Cuba, and carried the "Message to Garcia;" and Lieutenant Victor Blue, now rear-admiral on the retired list, U. S. Navy, who made three trips into the Spanish lines seeking military intelligence. The second of these was to discover whether all the ships of Admiral Cervera's Spanish squadron were in Santiago Harbor; the third to determine and plot the anchorage of each ship. On his second trip he was in disguise, having to pass through open country in sight of the Spanish garrison. He exchanged his naval cap for a Cuban major's sombrero, covered his white summer uniform with mud and passed in the tall grass as a Cuban non-combatant. For this feat he was advanced five numbers in rank.

In the Philippine Insurrection, Brigadier General Frederick Funston of the volunteers practically ended the revolt with the ruse that resulted in the capture of the Filipino leader Aguinaldo. For more than a year American officers had sought to learn where Aguinaldo was hiding. Funston trained Macabebe scouts to impersonate *insurrectos*, arming them with the Mauser and Remington rifles used by the enemy, instead of army Krag-Jorgensons. These men, three Tagalogs, a Spaniard, and Segismundo, leader of *insurrectos*, with the American officers in the rôle of captives, were landed on the Luzon coast. They marched one hundred miles to Aguinaldo's village. Letters informing him that part of his expected reinforcements were on the way had been sent ahead to Aguinaldo, and he was on hand to meet them. At a given signal, his bodyguard was attacked and scattered. He was captured. Funston was commissioned a brigadier in the regular army for this exploit.

Of the spies in American history, more escaped death than paid the penalty. Some that escaped death were rewarded; others not; but all were brave, faithful soldiers in a silent army.



E. M. NEWMAN, BEDOUINS AND ARAB GUARDS IN CAMP AT THE LOST CITY

A CITY THE WORLD FORGOT

By E. M. NEWMAN

Traveler, Lecturer and Author

WHEN I first read of how Burkhardt, the Swiss explorer, stumbled upon the lost city of Petra in 1812, I made up my mind that one day I would see that amazing place.

Burkhardt had hoped to penetrate Mecca, the sacred city of the Mohammedans, a feat that would have cost him his life had he been discovered. Traveling southward along the Sinai Peninsula in Arabia, he was attracted to a curious range of mountains that skirted the valley through which his road lay. Determined to have a closer look at them, he plunged into the tangled trees and oleander bushes. He found a faint trail, choked with boulders and almost obliterated in places by the elements. It wound tortuously into a gorge, which he entered. His Arab escort grew more sullen as the horses slipped and staggered to where the gorge apparently ended in two towering pillars of brilliantly tinted sandstone, between which, screened by the oleanders, he found a narrow entrance. The Arabs either did not know or did not want to tell what lay beyond; but

Here is the kind of travel article that we all like to read; forbidden cities are always fascinating. Mr. Newman's story of his expedition to the Lost City, has been eagerly sought by various periodicals. He wrote it especially for The Mentor —the magazine in which all his travel articles appear.

ENTRANCE TO THE GORGE
That the Swiss explorer, Burkhardt, entered and thus discovered the Lost City

Burkhardt pushed on and was astonished to see, spread before him, a great city carved in solid rock. It was Petra, the city that was lost to the world for almost fifteen hundred years.

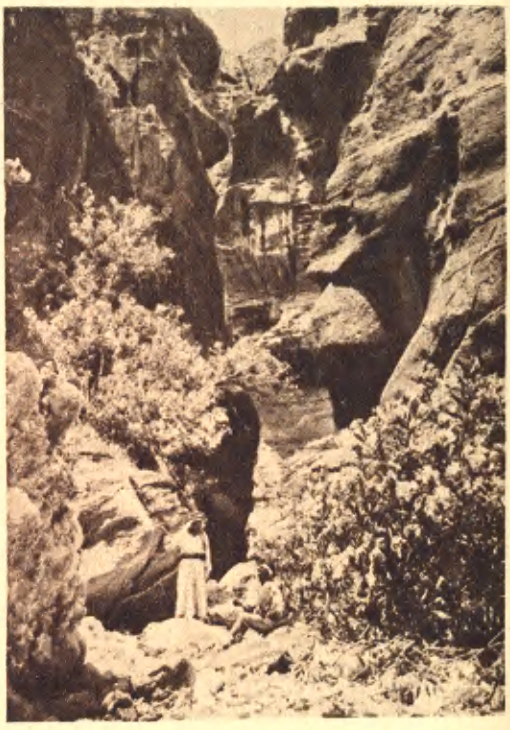
Fewer than one hundred white men have seen Petra since Burkhardt's time. One has to be strongly guarded to visit the lost city. The country is inhabited by hostile Bedouins.

The close of the World War found me in Jerusalem determined to realize my lifelong desire. I proceeded to Jericho in the Valley of the Jordan where I crossed the river and drove on to Es Salt. From there I took the Mecca Railroad to Maan, the "jumping off" point. At Maan, I learned that I could not go further without a caravan. Soul-trying days followed, in which, after the interminable bargaining necessary to the most simple transactions in the Near East, I was able to obtain thirty-eight horses, eighteen friendly Bedouins, food, tents, cots, camp equipment and a guard of twelve soldiers.

From Maan to the place where Burkhardt discovered the Sik or gorge, through which he entered Petra, is a twenty-eight mile ride through rough country. I found the gorge still choked with oleander bushes. Only when our horses had pushed through them did I realize how narrow the canyon was; nowhere is it more than 40 feet wide and in some places not ten feet.

We rode a mile and a half between towering cliffs before we reached the entrance to the rock city. The deeper we got into the mountains the higher they rose. Now and then a precipitous turn brought us apparently to the end of the gorge, only to reveal another narrow opening. We pressed through these and, suddenly, there was Petra, just as Burkhardt had described it!

Before us, carved in the base of a cliff, was "Pharaoh's Treasury," one of the finest monuments of antiquity. Colored with the natural hues of the brilliant sandstone, it is as fresh today as when it came from the sculptor's chisel, perhaps two thousand years ago. Beside this monolithic structure, we were pigmies. The entrance is flanked by four Corinthian columns, one broken at the base. The second story is solid. Above the central dome is an urn



WHAT SEEMS TO BE THE END OF THE GORGE
But what the explorer found to be merely the approach to the Lost City

THE GATEWAY TO THE FORGOTTEN CITY

The end of the Sik, or gorge, that leads to Petra. Burkhardt turned the corner and saw spread before him a great city cut and built into the walls of the basin formed by the widening of the gorge

which the Arabs believe contains the treasures of the Pharaohs. Even today, Bedouins drive their bullets into it, hoping to shatter it and get the fabled treasure.

I passed through the large portals. Within was a chamber, 40 feet wide and 100 feet long. If the silence of the tomb hung over Petra outside, here was the silence of Death itself. Walls and floors were in as good condition as on the day they

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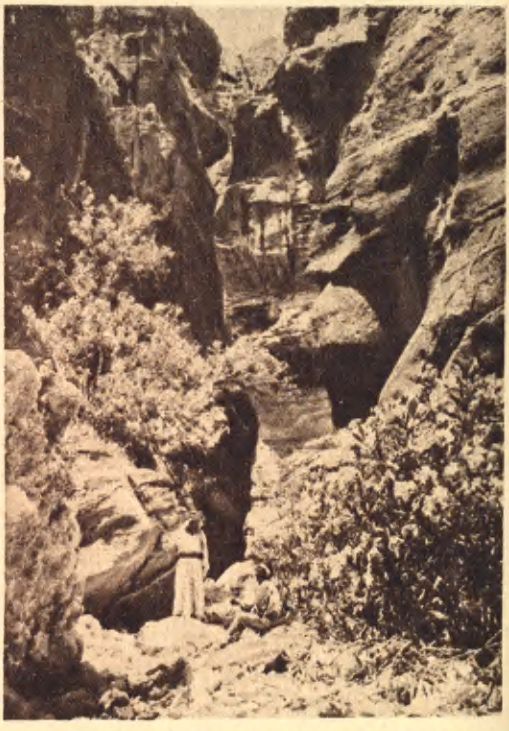

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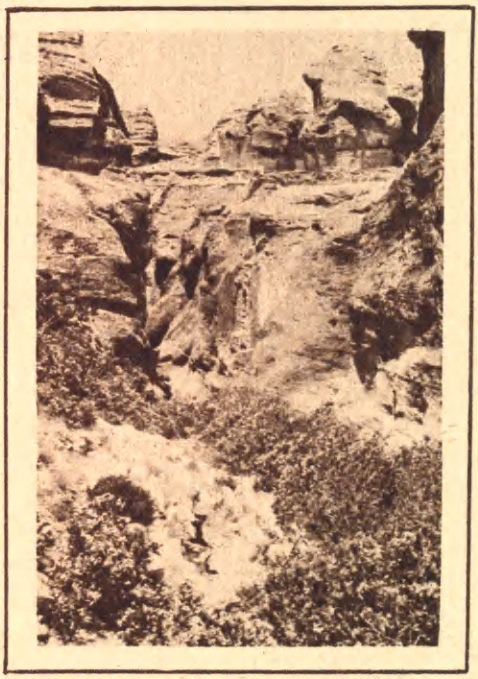
WHERE PETRANS WERE ENTERTAINED

Hadrian's amphitheater, built by the Roman Emperor during a stay in the Rock City, when it dominated all Arabia. Men and women alike attended the gladiatorial shows here, where edged weapons and loaded mitts were used instead of the gloves of today and Death gave the decision

were carved, but, otherwise, not a thing remains to evidence the purpose this great vault was put to.

Emerging from the gloom of the Treasury, I saw an amphitheater below. About its rims rose tier after tier of terraced streets lined with rock-hewn houses, and, above all, on the very rim of the gorge, were tombs, partly built and partially cut into the rocky walls.

Time, frost, heat and tempest had worked havoc with what man built at Petra. A spirit of utter desolation hung over the dead city. In that huge expanse not a living thing moved. The intense noon sun threw every structure into high relief; the distant tombs and buildings wavered in the heat. Not a sound broke the profound silence. It was the most enchanting place I had ever seen.



OLEANDERS, CLIFFS AND TOMBS

One might spend a month poking about Petra and not exhaust its interest. I could not stay more than a week, but it was a week filled with strange emotions. We pitched camp in the center of the amphitheater and conducted our explorations from there. In that great bowl, that once rang with the clash of arms, the roars of wild beasts and a still wilder

THE "TREASURY OF PHARAOH"

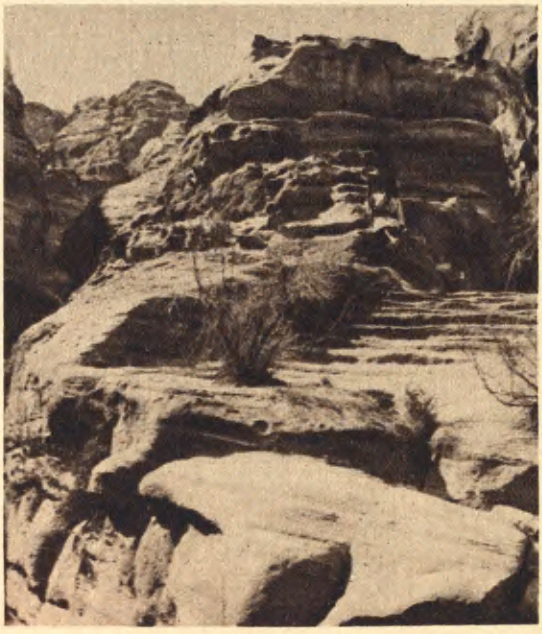
One of the principal buildings of Petra and one of the world's most remarkable relics of an ancient civilization. The Arabs believe that the urn over the entrance is filled with Egyptian treasure and, even today, empty their guns at it in hope of shattering it and getting the treasure

audience, our voices had the effect of being smothered in silence. Archaeologists say that the Roman Emperor, Hadrian, built the amphitheater, the road that leads to it and the palace that flanks it. The grateful Petrans engraved his portrait on their coins. There are seats for 3,000 but I believe that at least 6,000 could have watched the gladiators comfortably.

The following day, I picked up Roman,

Nabataean and Hebrew coins in the streets. I found tear bottles, lamps and pieces of pottery in the homes and palaces of this city that was "dead" a thousand years before America was discovered. I saw buildings that revealed the successive stages of Petra's history.

Petra was undoubtedly a city in the dawn of history. Situated as it was, near "the cradle of civilization," and a natural stronghold, it was the inevitable gathering place of whatever people lived in the Sinai region in prehistoric times. The Bible mentions a rock city, Selah, that is thought to have been Petra. The Arabs have a tradition that Moses, leading the children of Israel out of Egypt, spent twenty years at Selah. There is no proof for this but it is interesting to note that the valley leading to Petra is now known as Wady Mussa, or Moses's Valley. It is thought that the Horites,



A STAIRWAY AT PETRA

A MYSTERY OF THE AGES

Homes in the older part of the Lost City. Built by whom? These dwellings, cut into the solid rock, antedate the Great Pyramids of Egypt

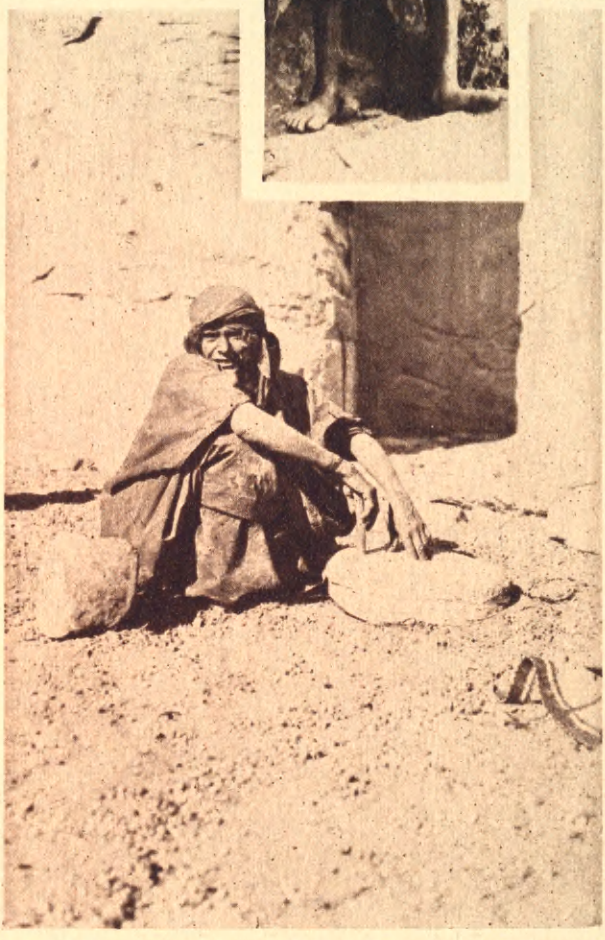
WHAT REMAINS OF AN EASTERN PALACE

The Roman Emperor, Hadrian, credited with having built it, probably looked with scorn upon the habitations of the natives, cut into the cliffs hundreds of years before his time. They endure today and this is what is left of his palatial mansion

a people that preceded the Edomites, who are mentioned in the Bible, first lived there. They were succeeded by the Edomites, who in turn, as the Judeans moved northward in Palestine, were succeeded by the Nabataeans, an Arabic people. Being a point on several caravan routes of the ancient world, the rock city grew to be a metropolis. As part of the Roman Empire it dominated Arabia. In the time of

(Continued on page 22)

THIS girl hid herself underground when the Newman party first pitched camp in the ruined amphitheater, but became very friendly before the week passed



GRINDING THE WILD WHEAT

A FAMILY G

DWELLERS

Tenacious life manifests
half-starved Bedouins liv
They subsist on wild wh
desert affords. Mothers
of the

ONE OF NEWMAN'S ARABS

N MODERN PETRA

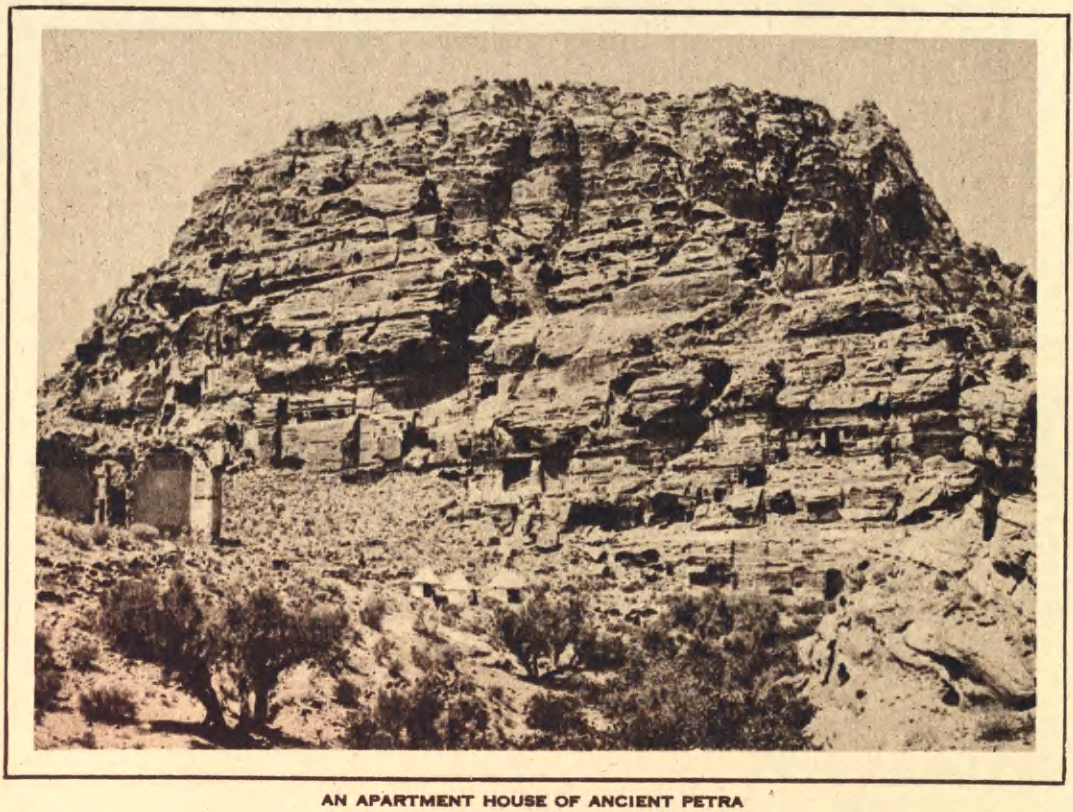
A DEAD CITY

even in a dead city. These
the deserted tombs of Petra.
and the scant foodstuffs the
le their babes in the coffins
ished dead.

ENTRANCE TO A BURIED HOME

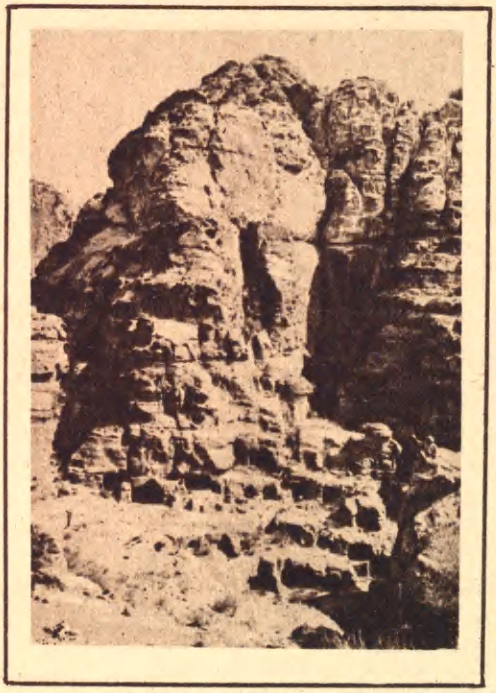
AN impressive stone coffin is this girl's bed; coins and utensils of a people that lived centuries ago her playthings and a deserted tomb her home

BROTHER AND SISTER



AN APARTMENT HOUSE OF ANCIENT PETRA

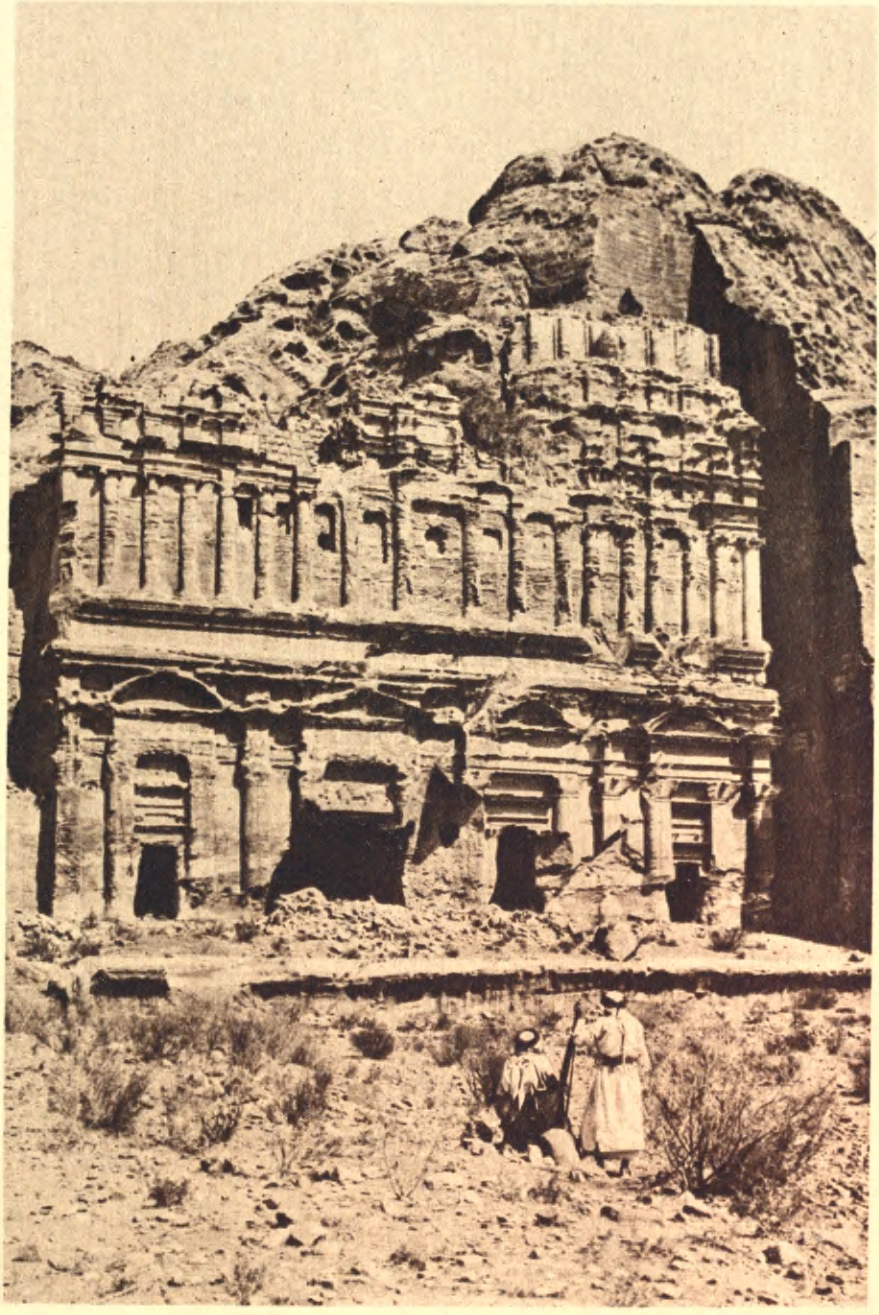
Constantine, it became known as Petra. Then, in the fourth century after Christ, it ceased to exist as a city. Why, is one of history's enigmas. Some think the Persians annihilated the population, but there is a growing belief that an earthquake flooded the gorge and inundated the city. In 1189 A.D. the Crusaders built a citadel on the heights above Petra, the remains of which still stand. Whether or not there was a lake there then is not known. I saw many columns that were worn at the base as if by currents and other evidence that make me believe the city was flooded.



STREETS AND DWELLINGS

Excepting the Crusaders, no European looked upon Petra until Burkhardt rediscovered it. Indeed, the world forgot that there had ever been such a place. In the thirteenth century, a Birbar Sultan of Egypt was said to have seen Petra, but the knowledge of it was jealously guarded by the Arabs.

While exploring the rock-hewn tombs I came upon a few miserable Bedouins. Unlike their brothers of the desert, they were a frightened lot. The children ran from me and hid in the burrows that were their homes and playground.



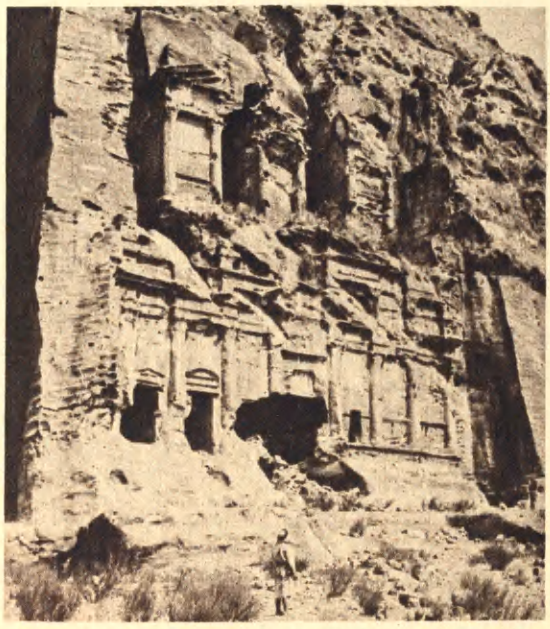
THREE RACES HAVE LEFT THEIR MARK

Nabataean, Greek and Roman ruled at Petra at different times. This Corinthian building was constructed by one of the last rulers of the Rock City

Presents of food made them friendly at last and I was able to photograph them. Half-starved, they live on wild wheat and the scanty forage of the desert country. These Bedouin mothers put their babies to bed in the ancient coffins. Tombs are their homes and the furniture of the dead their furniture. They live and die in this thrice desolate spot, a cemetery in a dead city deserted even by the dead.

In one of the tombs, I found a columbarium, like those in the catacombs of Rome. The Petrans apparently cremated their dead and kept the ashes in urns in pigeon-hole receptacles in this columbarium.

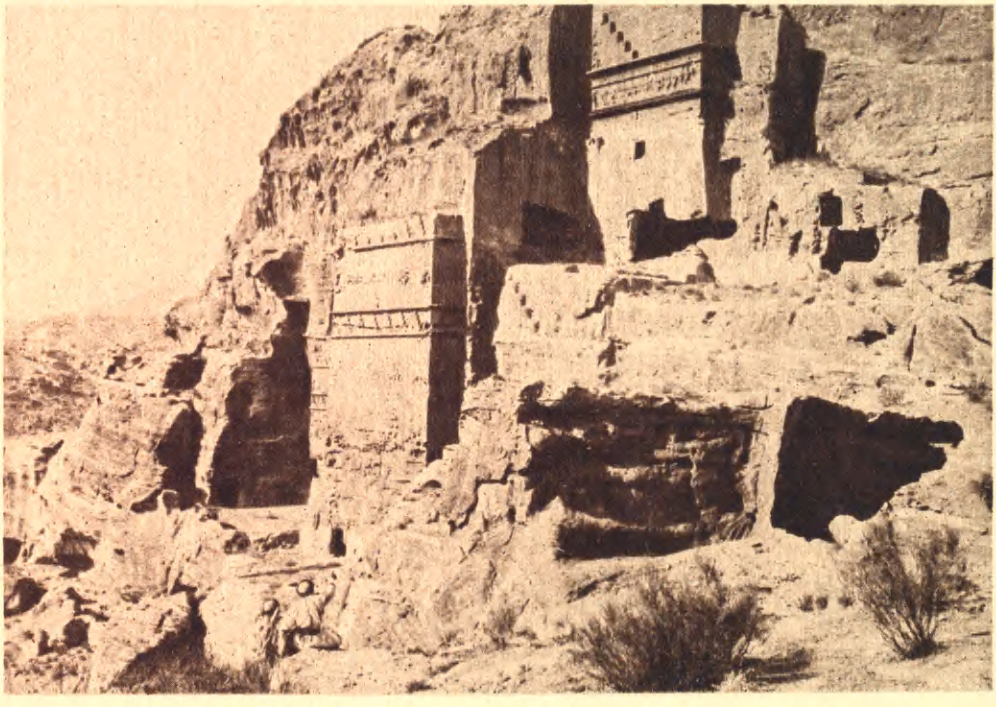
The houses, however, revealed little of life as it was in ancient Petra. There were broken bits of pottery on the floors. In some of the houses there were stone tables and chairs.



A VANISHING TEMPLE

All of them had fireplaces. The palaces were little better. Corinthian columns and elaborate carvings adorned them. Most of the palaces were on the lower levels and the houses of the common folk on the streets above the amphitheater. These were reached by rock hewn stairs leading from terrace to terrace, many of which are in good condition today.

One of my last explorations took me to the



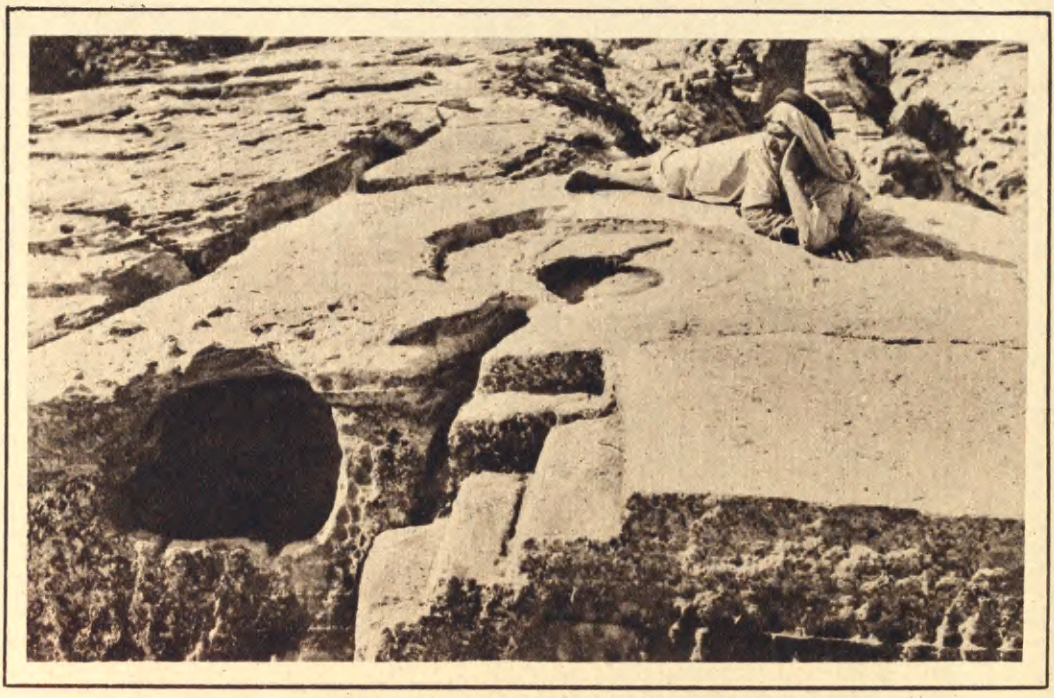
RELICS OF A ONCE POWERFUL RACE

What is left of the Nabataean period of Petra's building. When Nineveh and Tyre were capitals of the world, this Semitic people occupied Petra and made it the capital of a powerful kingdom

WAR OR FLOOD THE DESTROYER?

These tombs at the base of the cliffs that guard Petra show indications of having been under water. Science is not certain as to whether the people of Petra were annihilated by flood or in a war with the Persians

altar on top of one of the surrounding mountains. Sacrifice was common among the Semitic peoples, and the altar at Petra is thought to have existed before the city was built. Prehistoric or not, it is the finest existing example of the Semitic sacrificial altar; the steps are still there and the trough for the flow of blood to a basin beneath is in perfect condition. One needs little imagination to picture the patriarchal



WHERE THE DEITY OF PETRA WAS WORSHIPED

This is the finest example of a Semitic sacrificial altar extant. All of the Semitic peoples practised religious sacrifice. The animal was killed and laid upon altars like these. The bowl in the center carried away its blood and the font at the side contained water for the priest's ablutions. Petrans worshiped their deity in the shape of a black stone similar to the Kaaba of the Mohammedans

priest, the reek of incense, the bleats of the terrified animal, and then the victim weltering on these stones, a propitiation to the god the Nabataeans worshiped in the symbol of a black stone.

The chief god of Petra was Dhushara, or the lord or owner of Shara. Associated with him was the ancient Arabian goddess, Allat. Many of the sanctuary places that I found in Petra were dedicated to these deities. These are marked by altars, open to the sky, some of them among the tombs and others near what were evidently public buildings. But the greatest of them was the ancient sanctuary on the high place where I stood. Not far off are two obelisks cut out of the solid rock which was removed to the level of their bases. These may have been the idols, Dhushara and Allat, but more likely were designed to mark the limits of the *haram* of the sanctuary. It is interesting to note how the word *haram* (forbidden place) has come in the western world, under the form harem, to

A LATER TEMPLE

The convent of ed-Deir, a relic of the Christian era in Petra, was built when the city was part of the Eastern Roman Empire

THE STAIRWAY TO THE SANCTUARY

The public altar of Petra is situated high above the city, reached by a stairway cut in the cliffs. Up these stairs the high priest and his procession toiled to propitiate the gods with sacrifice upon occasions of public worship

mean the dwelling place of the women in a Mohammedan household, actually it means any forbidden place.

West of the obelisks are three other places of sacrifice. On the rocks below them the worshipers carved their names.

Christianity came to Petra in early times. One of the tombs was used as a church, for an inscription in red paint records its consecration "in the time of the

most holy bishop Jason." This bishop Jason lived in 447 A. D. The Christianity of Petra was swept away as was that of all north Arabia when the Mohammedans overran the eastern world in 629 A. D.

From the sanctuary one can see the fragments of the Crusaders' citadel. Under the Crusaders' brief rule in the Holy Land the site of Petra was occupied by Baldwin I. Petra was known as the Castle of the Valley of Moses or Sela. The Franks remained in possession of their Castle of the Valley of Moses until 1189 A. D.

The map of the world had changed, a new world in the west had been discovered and a great new nation was already waging its second war before another European looked upon Petra. Burkhardt made his discovery in 1812. Other explorers followed him. Brunnow and Domaszewski, the archaeologists, have made the most minute study of the city as it stands today and their book, published in 1904, sheds more light upon the history of the Lost City than any previous description.

A MONUMENT OF THE CENTURIES

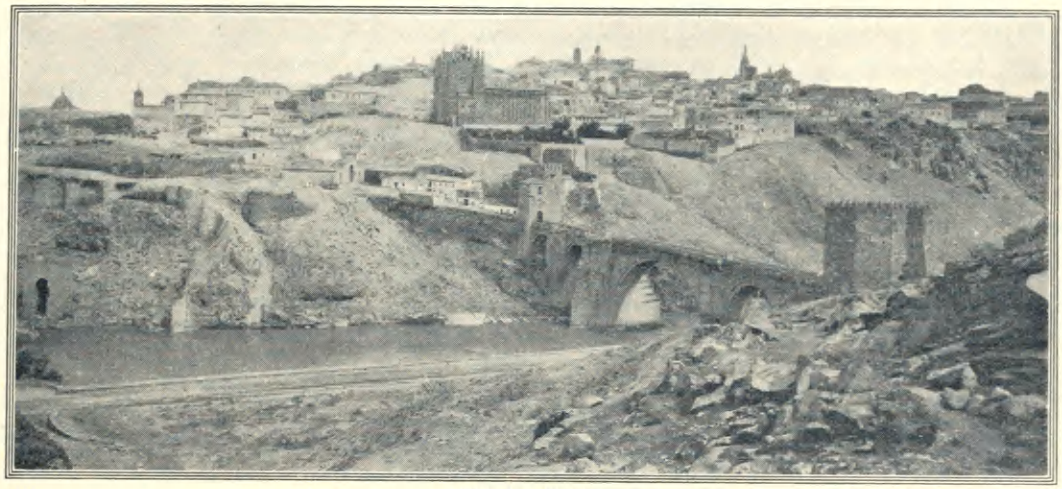
This obelisk, one of two carved from solid rock, stands near the great sanctuary. It is thought to have been a marker for the limits of the forbidden ground, but stands today an adequate monument to the memory of a great city the world forgot.

From the sanctuary, Petra revealed new wonders. The wear of weather on the sandstone keeps its colors always fresh. In the softer light of late afternoon, the city swam as in a tinted sea. The eye was saved from the raw reds, blues and yellow of noon; the coloring was as delicate as an orchid's and more graduated than a pastel pallette. It was as soft as pastel, too, but not so opaque; every building glowed with a sort of subdued brilliancy. It is my most graphic remembrance of Petra.

Nor shall I forget my nights under the stars in Hadrian's amphitheatre. Lying in my cot, I looked upward at the shadowy forms of the thousands of deserted dwellings, hewn from the rock during epochs that go back to the unknown ages. Silent and mysterious by day, Petra is like a vague dream by night, unreal, enigmatic.

Go where you will in the wide world and you will not find Petra's counterpart. It is the great riddle. The ruins are its only reality. Rome's Colisseum, the Acropolis at Athens, the pyramids, even, will leave no greater impress on your memory. The sense of Petra's unreality was with me all the way back to Maan. However, corrugated iron sheds and the railroad brought me back to the twentieth century. Petra was the Arabia of Scherezade and her Thousand and One Nights; Maan is the Arabia of the railroad and the French Mandate. One day, perhaps very soon, a highway will be built from Maan to Petra. Hotels and tourists will follow. Then Petra shall have lost much of its charm. I am glad that I saw it before the tourist has carved his initials on the facade of Pharaoh's Treasury and the great silence is broken by clamoring guides. For me it shall always be the marvellous Lost City, just as it was to its modern discoverer, Burkhardt.

THE OLDEST CITY IN EUROPE



Toledo, Spain

TOLEDO, the "Crown of Spain," set on the heights above the dwindling, dawdling Tagus, is the oldest city in Europe —and looks it! Her mysterious walls, her antique bridges, her river and bordering plain are a wizened yellowish brown. Dark, winding streets furrow her brow. The very hills of Spain's ancient capital suggest a bent and crooked back. Toledo, the venerable, the storyful, is bowed with the weight of centuries. Indeed she was a gray old crone of a town before most of the great cities of the world were conceived.

In the days before histories were inscribed, Toledo was a power in the Mediterranean empire. The Spanish have a saying that Adam was the first emperor of their peninsula, and chose the site of Toledo for his capital. According to legend, the walls of the city were swept away during the flood, and the grandson of Noah rebuilt them. "Tubal's walls," repaired by Jew, Roman, Goth, Moor, Christian, are the walls that defend Toledo to-day.

The Jews, fleeing Jerusalem before the scourge of Nebuchadnezzar, found asylum in Toledoth, "the utmost corner of the earth." They called it the "City of Generations." Even in early Bible times, it was known as a powerful and populous center.

The Goths, who took Toledo from the Romans (who took it from the Carthaginians), so embellished and amplified the city on the height above the Tagus that it became to them "the crown of Spain, the light of the world." The Moors, who followed the Goths, went on building and increasing the city's trade, until finally it attained a great population, busy with crafts, art, and learning. The Christians came into final possession in 1085.

Travelers that make the two-hour journey from Madrid to see the ancient glories of Toledo spend most of their time in the cathedral. The devout Spaniard will tell you that the Apostle James, on a visit to Spain, gave the order for the first church raised on this site. The present edifice, of overpowering size and beauty, was consecrated in the year that Columbus was beginning his first voyage to the isles of America.

In out-of-the-way Toledo courts and byways there are reminders of the Cid Campeador and the great Cervantes—of the extraordinary El Greco, too, the Greek painter whose life was passed chiefly in Toledo. The best of his paintings are in Toledo churches. In the shops are makers of the Damascene ware that is a legacy from the Moors. Most important of all Toledo's manufactories are the sword-blades whose traditional sharpness and suppleness are due in some part to the peculiar quality of the water on this barren plateau.

Though her streets are mildly astir, Toledo never seems to be fully awake. The stupor of age is upon her. She lives in ages that are past, like an old woman in her dotage. To-day the "Mother of Cities" clings like a chrysalis to the steep hillside—a chrysalis dust-colored and brittle, from which life has all but fled.—*Ruth Kedzie Wood.*

"LINCOLN WAS SO GLAD, HE KISSED ME!"

HENRY E. WING, a retired Methodist minister of Springdale, Connecticut, is 82 years old. But he can tell one story of his youth as clearly as if it happened yesterday. It is a story that any American would be proud to tell—a story revealing the human side of Abraham Lincoln and brand new so far as the public is concerned.

The experience that brought Wing into contact with Lincoln is as dramatic as any situation in Civil War drama or fiction. Here it is in his own words:

"May 6, 1864, found me with Grant in the Wilderness, with news that the nation was waiting for. I was the youngest of the New York 'Tribune's' field correspondents. Two years before, I had enlisted, was wounded at Fredericksburg, and invalided out of the service. I had gone to work for the Norwich, Connecticut, 'Bulletin,' where I wrote an editorial that attracted Horace Greeley's attention and he had given me the job as correspondent. I had joined the Army of the Potomac at winter quarters in northeastern Virginia. The hopes of the North were centered on that army. Then, suddenly, Grant and his 120,000 men disappeared into the forests south of the Rappahannock and Rapidan rivers, cut off communication, and engaged Lee in that desperate three-day battle.

H. E. Wing
As he appeared in Civil War time

"At the close of the first day's fighting, as Grant was reforming his lines, the four 'Tribune' correspondents decided that one of us should try to get through to Washington and telegraph the news to our paper. I was 25, the youngest; so I volunteered.

"While making arrangements to leave, I met General Grant and told him of my plan. I asked him if I could carry a message for him. Knowing, of course, that the seventy miles that lay between me and Washington was filled with guerrillas and enemy troops, he smiled grimly.

"'Well,' he said earnestly, 'if you do see the President, tell him for me that, whatever happens, there will be no turning back.'

"By four the next morning I was in the saddle and away. At Culpeper Mines a Unionist friend furnished me with a 'butternut' suit, a battered hat, and a pair of brogans, which he persuaded me was a safer costume than my correspondent's uniform. Shortly afterward I was more than glad that I had taken his advice, for I ran, head-on, into a party of Mosby's guerrillas and was able to convince them that I was a Southern messenger to sympathizers in Washington. They offered to guide me to an easy ford on the Rappahannock and I could do nothing but accept. As we neared the place, my elation at having deceived them vanished, for they were taking me to a ford guarded by a man that knew I was a Northern correspondent. The inevitable happened; I was recognized and had to cut for it. I spurred into the river, missed the ford and was forced to swim my horse across with the bullets splashing all around me.

"I got through, though, without a scratch, only to be held up by Confederate cavalry at Manassas Junction. I had abandoned the horse and was walking along the tracks of the Orange and Alexandria Railroad when they nabbed me. The guards were not strict. I waited until dusk, crawled between them, and ran. A six-mile walk in the dark, a challenge, and I was safely in the Federal lines at Union Mills.

"Of the half dozen correspondents that

had made the attempt, I learned I was the only one that had got through. But my troubles had only begun. The nearest public telegraph station was at Alexandria, 20 miles away, and it would close at midnight. This was at 9 o'clock. I couldn't get a horse or a handcar at any price, so over the military wire from Union Mills I sent to my friend C. A. Dana, second assistant secretary of war, this message:

"'I am just in from the front. Left Grant at four o'clock this morning.'

"Back came this:

"'Where did you leave General Grant?'

"It was signed, not by Dana, but by Stanton, Secretary of War. Then I realized what it meant; the Government did not know what had happened in the Wilderness; I was first to a telegraph with the biggest news of the day!

"I told Secretary Stanton that I would tell him all that I knew if he would let me send 100 words to my paper over the military wire.

"Again came the peremptory query: 'Where did you leave General Grant?'

"I replied that the news belonged to the 'Tribune' and reiterated my terms. Stanton's next message was to the post commander ordering him to arrest me as a spy unless I told what I knew!

"Hungry, tired, and miserable I stretched out upon a bench in that cheerless station. I was virtually on parole pending orders from Washington as to what was to be done with me. Camp was still as death. I was just drowsing off when the telegraph sounder chattered again.

"'It's for you,' said the operator. 'Mr. Lincoln wants to know if you will tell *him* where General Grant is.'

"Mr. Lincoln! The President himself! Nevertheless, I repeated the terms I had made to Secretary Stanton and they were promptly accepted with the request that, in view of the importance of the news to the country, I give the Associated Press a brief summary of my dispatch to the 'Tribune.'

"I was no longer hungry, tired, and miserable. Nothing whatever was the matter with me. Standing at the side of the operator at Union Mills, I dictated a dispatch that occupied a half-column in the 'Tribune' of the following morning. With the knowledge that my article was in my paper's hands, I started for Washington on a locomotive furnished by the President.

"The Cabinet was assembled at the White House when I arrived at about two in the morning. As I entered the room, I suddenly realized how unkempt was my appearance. I became aware that my 'butternut' coat was very wrinkled and very dusty; that the trousers, far too long for me, had been turned up and tied with coarse twine; that my hair was wildly disordered; and that my brogans bore heavy deposits of the 'sacred soil' of Virginia. Gideon Welles, Secretary of the Navy, and a personal friend, introduced me around. With the aid of a large wall map I explained to the President and his aides what was happening in the Wilderness. Then I said that I had a personal message for the President and the Cabinet withdrew.

H. E. Wing
As he appears to-day, age 82

"Alone, the President seemed immensely tall. I had not noticed it until he stood over me while I stammered out General Grant's message. He couldn't hear me clearly, and no wonder! Grasping me by the shoulders he bent over until his eyes were level with mine and made me repeat it. I summoned every effort to speak collectedly and said slowly:

"'General Grant told me to tell you from him that, no matter what happens, there will be no turning back.'

"The President's wonderful eyes glowed. I shall never forget this picture of him. Every other leader of the Army of the Potomac had turned back, and I had brought him word from one that would not. Exuberant, he pulled me to him—and, he was so glad, *he kissed me on the forehead.*"

FASHION FOLLIES FOLLOW WAR

KNEE skirts, and waists minus sleeves or backs, "beauty windows," and transparent petticoats, it now seems, are just a matter of history. History repeats itself in feminine attire as in everything else. Every big war has brought a reaction in reckless dress. Venus has always stepped brazenly on the heels of retreating Mars. The women of 1921 are no worse and no better than the women of 1821 or 1281—B. C. or A. D.

As surely as war ends and man-power is depleted, women, impelled by competition to seek mates by any means in their power, cast off reserve in dress at the sacrifice of modesty. The cannon has scarcely stopped firing when they begin to plan their demoralizing campaign. In truth, the history of post-war excesses in dress goes back farther than cannon. In the days of bows and arrows and battering rams, in the time of Hamilcar the Carthaginian, killed a dozen centuries ago in Spain, the story was the same. Woman's nature does not change, nor her motives, in any age.

The higher the form of living, the more quickly has daring and scanty apparel come into style after the declaration of peace. In ancient Athens, when long foreign wars had killed off a great proportion of the males, even the Government took a hand in the matter, and commanded that tunics should be so designed that the beauties of the female figure would be emphasized.

Portrait of Madame Récamier, by Gerard

Both this portrait and the one by David show the famous French beauty with bare feet

Similar conditions existed in Rome after the Punic and Civil wars. It was so in the time of Cæsar, and it was so under the Pharaohs. Social conditions at the close of the Cromwellian wars in England were marked by flagrant lack of restraint and by exotic display.

After the Reign of Terror in Paris, during the period of the Directorate (1795-1799) women of all degrees of society exploited their charms in quite shameless manner. It became the vogue to wear dresses of Greek design and filmy texture. When Madame Récamier, the celebrated French beauty, visited London, her costume amazed the English people. Crowds used to follow her about the streets and stop her carriage. They had never seen a woman so fair, nor so frank in revealing her charms.

A certain great lady attended a ball in Paris clad lightly in a Greek tunic—and nothing more. A wager was laid by a group of her admirers that her garment and her ornaments, placed on a scale, would not weigh more than two pounds. She retired to a dressing-room, removed her robe, and stripped the jewels from her neck and bare toes. When she had put on her dress, she returned to the ballroom. "You exaggerate, messieurs!" she announced. "The costume weighs but one pound."

After that the style of a gown was judged by the quantity and diaphanous quality of it. Ladies of fashion, who aimed to be, not well dressed, but "well undressed," besought their modistes to make dresses that

Dresses of Greek design and filmy texture, of the time of the Directorate in France (1795-1799)

weighed as little as possible. Doctors protested against the dangers of wearing such scant clothing in the variable French climate. Some of their patients actually died of exposure.

Two groups of extravagant women and men reigned during the Directorate. One group called themselves the "*Merveilleuses*" (pronounced mer-vay-yeuz), the other, "*Incroyables*" (ahng-krwah-yable) —the "Affected Ones," and the "Unbelievables." Madame Tallien, a leader of the Merveilleuses, adopted the ultra Greek style, with thigh and knee exposed by thin draperies. Madame Hamelin, a Creole belle, wife of a Swiss banker, dared to promenade quite nude except for a mantle of tulle. "Venus *en deshabille*," they called her. So wanton did Parisian fashionables become that Madame Hamelin and her kind were finally hooted from the streets by an outraged populace.

Madame Tallien

In ultra Greek style, with skirt exposing the knee

In England, short-waisted gowns were worn with coal-scuttle-shaped bonnets, bedecked with ribbons and feathers. Modistes fashioned their models according to the dictates of David, the leader of the French classic school of painting. Their patrons gathered their hair in fillets and clothed themselves in dresses as airy as those of their French sisters. They wore sandals on their bare feet, and affected ornaments of Greek and Roman pattern. In muslin gowns they braved the chill of the English winter, protected only by light cloaks.

No sooner had Napoleon met defeat at Waterloo, than the women of European nations began to array themselves in clothes that were mere shreds and patches. At that time no nation perhaps had suffered so much loss as France during the terrific struggle that began with the great Revolution and ended with the fall of Napoleon. The women of France set the fashions for the world, and a chronicler of the time wrote sarcastically that they seemed not only bent on divesting themselves of every article of apparel not absolutely necessary, but had made up their minds to make the remaining garments as small and near to nothing as possible.

It is a fact of history that they went to such lengths that the Church took the matter in hand and carried it up to Rome, where, on October 16, 1800, the Pope issued a bull, referred to as follows in the *London Times* of January, 1801:

"The Pope, after speaking in appropriate terms of the present scarcity of clothing and the sensations it might excite even in the bosom of a withered monk, and, quoting the authority of St. Clement, His Holiness strictly enjoins his officers, civil and ecclesiastical, to repress by fine or corporal punishment, according to the circumstances of the case, these crying enormities. He directs, too, that punishment should be extended to such damsels who, though at first sight they appear properly attired, are nevertheless decked in transparent robes, and with voluptuous attire display themselves in seductive attitudes. Moreover, fathers, husbands, heads of families, who weakly or negligently permit their wives, daughters, servants, etc., to trespass against these rules, shall not escape immunity. Also all tailors, haberdashers, and others who contribute to these enormities of dress, shall in nowise pass unpunished."

Walter G. Muirheid.

The "Affected Ones" and "Unbelievables"

THE HEARTBEAT OF DANTE

By REV. NEWELL DWIGHT HILLIS

IN EVERY age and land the best-loved books in the libraries have not been books of heroism and eloquence, but books of love. It is a singular fact that scholars have told the story of wars, laws, engines, and ships, but that no library holds a history of that strange tumult of the heart, that Swing once said began with "the gift of flowers and ended either a suicide or a wedding." In retrospect Dante is the world's great lover, as well as a voice for "ten silent centuries." His Divine Comedy is a cyclopedia of Italy, a complete guidebook to Florence and Rome, with full comments upon all public men and institutions. His Vita Nuova is a personal journal, a secret diary of the heart, the record of his thoughts and feelings toward a woman whom he believed to be the most beautiful and the most gifted being of her time. Dante had a powerful intellect, the finest imagination of any known artist, vast moral endowments, but all these gifts were like boughs of unblossomed buds that waited for some influence from without. Just as Abelard waited for the coming of Héloise, just as Browning never found himself until he met Elizabeth Barrett, just as Highland Mary kindled the genius of Robert Burns, so the imagination of Dante waited for Beatrice. Three times in his early career Dante saw this young girl, who was the daughter of a merchant living in an adjacent street. "She appeared to me," writes Dante at a festival, "dressed in that most noble and honorable color, scarlet, girded and ornamented in a manner suitable to her age; and from that moment love ruled my soul."

Dante and Beatrice in Florence

From painting by H. Holliday. Original in Walker Art Gallery, Liverpool, England.

Three times during Dante's youth, when his emotions were like molten ruby glass, ready to take on any form, he met Beatrice. Then after an absence from the city he returned to Florence to learn that her father had given the daughter in marriage. When twenty-four years of age Beatrice died. At this time Dante was only twenty-seven. In those olden days, midst the tropic warmth of Italy, lovers were older at fifteen and eighteen than they are in our frigid climate at twenty and thirty. How much did the youth Dante love Beatrice? The answer is not found in the greatness of the girl, but in the greatness of the youth. How large is a star? The answer to that question is determined entirely by the size of the telescope. The glass that holds one hundred diameters sees a thousand times more than the glass with two diameters. A one-talent man might have loved Beatrice a little, but this man of ten-talent genius, Dante, loved her with an immeasurable passion. Affection with some men moves as softly as a gentle breeze, but in Dante love swept on with the power of a mighty wave, or a majestic storm. The size of a conflagration is not determined by the size of the spark, but by the quantity of inflammable material that is waiting to be kindled. No one will ever know whether Beatrice was indeed the loveliest girl in Italy, whether she was the Kohinoor among all the glass beads, whether she was a crimson blossom plucked from the bough of the tree of life, hanging down from heaven's battlements, caught by Dante's hand in the moment he looked upward, or whether she was only one of the many flowers that grew in the garden of an earthly Florence. It may be that she was in reality the outstanding figure of Florence, as unique for Italy as Helen was for Ithaca. One thing

The Three Meetings of Dante and Beatrice

From original painting by Sonrell, in the Plymouth Institute, Brooklyn, N. Y. Reproduced by permission of the owner, Rev. Newell Dwight Hillis.

is certain: Dante loved her little in life, but loved her much in literature. Twenty years after her death this greatest man of his time, in solitude and exile, began to live in a world of dreams and visions. Suffering had made Dante great. In solitude he nourished his soul, and for years held heartbreak at bay. We know that it is within the power of the sun, in late afternoon hours, to cast the brilliant hues of gold and purple upon a rail fence, and so transform each piece of wood into pure gold. And it may be that this poet who was the strongest man then living in the world, at once a scholar, a statesman, and a soldier, turned his mind backward, re-created the face of Beatrice, and broke the alabaster box of genius upon the head of a girl who may have been a commonplace girl, just as Raphael, in a glorious mood of the imagination, lent the beauty of Saint Cecilia to the face of a flower woman whose figure held indeed the outlines for his drawing, but gave no suggestion of the divine, ineffable, and dazzling loveliness of Saint Cecilia's angel face. For Dante's book is not a poem, after the fashion of Homer's portrait of Penelope, or Tennyson's Maid of Ascalot. The Divine Comedy is at once an autobiography, a history, a social philosophy, a spiritual pilgrimage of a Thirteenth Century Childe Harold, an oration, with here and there a lyric poem. During those awful years of his exile, when the poet climbed the stairs of other men's houses, and salted his bread with his own tears, Dante might have used the words that were later upon the lips of Bacon: "I leave my name and fame to foreign lands, and to my own countrymen when long time has passed." It has been beautifully said that before Dante sang his song he had to invent his harp. Lowell explains his greatness by saying, "Dante wrote with his heart's blood, like an inspired prophet of old." Offered an opportunity to return to Florence on condition that he would confess that he had been guilty of some wrong, Dante accepted exile and homelessness rather than betray his great convictions. He was an old man at fifty-six. His last days were spent in Ravenna. During those years of loneliness he comforted his heart by the vision of God and Beatrice. Let us believe that after fifty-six years in his Inferno and Purgatorio the prisoner was redeemed out of his dungeon, the exile out of his loneliness, the fugitive out of his rags and crusts, and that at last the messengers of guidance and convoy brought him in out of the night, the fire-mist, and the hail, into the imperial palace of God, that had long seemed a "Paradise," where one word of welcome repaid him ten thousand times for all the bitter years, and that when one word of love leaped forth Dante's every wound was healed.

THE WORLD'S MOST UNFORTUNATE POET

WE have told, in a former Mentor, the story of the famous Shakespeare forgeries of William H. Ireland, the gifted, seventeen-year-old youth with a twisted mind. In his Confessions young Ireland tells us that his mind was turned to thoughts of literary forgery by reflecting on the career of that unfortunate young genius, Thomas Chatterton. The sister of Chatterton lived not far away, and William Ireland had visited her and drawn from her the pathetic life story of her gifted poet-brother. Young Chatterton had produced wonderful poems of a mythical monk of the fifteenth century whom he called "The poet-priest Rowley," and had started a controversy among literary men that lasted eighty years.

The Death of Chatterton
From original painting by Henry Wallis in The Birmingham Gallery, England.

Many forgave Chatterton his forgeries because of the artistic beauty of his own poetry—not far short of that of Keats. The leading poets of his time—Coleridge, Wordsworth, Rossetti, Shelley, and others—testified to the boy-wonder's divinity in the art of poetry. But the serious-minded student critics "got him"—and so, worsted in the battle at an early age, the young poet blew up the ship rather than strike his false colors. It was the saddest, maddest story of twisted genius that we know.

Thomas Chatterton was born in Bristol, England, in November, 1752. His father, a roystering fellow, but a lover of books and coins, and a dabbler in magic, died before the young poet was born. His mother was a poor school teacher and a needlewoman. Chatterton was a queer, dreamy boy, devoted to books and old manuscripts. He began to write poems at ten years of age. His life was sordid; he slaved and slept in a kitchen—and, when his drudging work was over, he buried himself in books.

In 1769 he wrote his first Rowley poems (which he dated 1469), and sent them to the great Sir Horace Walpole, statesman, author, and patron of arts and letters, who was captured by them, and convinced for a while. Then, when critics pronounced the Rowley poetry forgery, Sir Horace scolded the boy, threw the poetical productions back at him, and thought no more of him until two years later when Oliver Goldsmith told him of the young poet's tragic death. Walpole regretted when too late, and paid the unhappy boy a warm tribute of praise for his "masterly genius." Chatterton went to London, and, in mad, feverish, sleepless haste, poured out, as if with a hundred hands, poems—of his own, besides "Rowley poems"—essays, stories, and letters. For a brief time his prospects seemed golden. His productions found ready acceptance and publication—but, unfortunately, many of the editors who were willing enough to print and praise his contributions were very shy about paying anything for them. And after a while a reaction set in against him, with threatened exposure of the "Rowley" forgeries.

He was penniless and starving, when, in 1770, at 18 years of age, he locked himself in his garret room, tore up his manuscripts—and took arsenic. The next morning, his landlady, alarmed that her poor young lodger did not make his appearance, had the door of his room broken open, saw the floor littered with small bits of paper, and the unhappy Chatterton lying on his cot, his head and arm hanging over—quite dead. No one claimed the body, so he was buried in a pauper's grave.

Then the wise and formal critics got after him, and tore his work to pieces. "Grave owls mangling a poor dead nightingale," as Coleridge said. No one knows what a wealth of rare fine work Chatterton might have given the world had he lived longer.

W. D. M.

$22,685 FOR FOUR INCHES OF PAINT

THE highest price ever paid at public sale for a square inch of painting was given recently at Paris by a Swiss woman for a portrait—four inches in diameter—painted by the great German artist, Holbein. The purchaser was a Madame Paravinci and the price, $22,685.

The former record price, measured by inches, was $250,000, paid by Carl Hamilton of New York for a painting, twelve by seven and one-half inches, of Mantegna, an early Italian artist.

In 1521, when the much-married King Henry VIII reigned in England, there came to his court one Lucas Hornebolt, a young German painter, and his sister, Susanna. Lucas was kept busy painting Henry's courtiers and Susanna married one of the King's bewhiskered bowmen, John Parker.

Then an artist calling himself Hans Holbein, the Younger, appeared at court. He speedily became the most popular painter; folks knew more about painting in those cameraless days. Hornebolt was not jealous; he had plenty to do painting miniatures, which were his specialty. In 1534, this Holbein tried his hand at Hornebolt's art and, as in every other artistic endeavor, excelled at it. As a compliment to Hornebolt, he painted him, also sister Susanna and brother-in-law bowman. The portrait of Hornebolt was not small enough to be a true miniature but was what is known as a roundel. It was this roundel that Madame Paravinci recently paid the record-breaking price for.

Holbein was born in Augsburg, Germany, in 1497. His father was a famous painter. He taught his two sons, who went to Basle to seek their fortunes. Both designed initials and decorations for books. Hans is thought to have gone to Italy; when he returned he painted historical and religious subjects. The other brother remained an illustrator of books all his life. The Reformation put an end to Hans' religious painting, so he moved to England.

After painting the Hornebolt roundel, Holbein returned to Basle, in what is now Switzerland. He had left his wife there during the years he was in England—from all accounts he was not a model husband. He returned in triumph, however, clad in silks and furs and received as the town's official painter. He painted many pictures of various styles. Fortunately, much that he did was preserved, and remains to-day a monument to his gifts and energy. In the museum at Basle are two portraits of the notorious Dorothea Offenburg, painted by the great Holbein, who, rumor had it, fled to London to put an end to an impassioned affair.

A Four-Inch Portrait by Holbein. Price $22,685

London merchants gave him plenty to do, and he was still in demand at Court. Henry VIII paid him a salary and commanded him to paint noble ladies that he chose for wives. One of them, the sixteen-year-old Duchess of Milan, sat for her picture, but refused the kingly hand, saying she had but one head, and preferred to keep it on her shoulders. Holbein's spirited portrait of her is one of his best.

A portrait of Holbein himself, done at this time, shows him to have been a ruddy, vigorous man with graying hair. He was busy on an important commission when the Great Plague of 1542 swept London and claimed him as one of its first victims.

WHAT DO YOU KNOW ABOUT THESE?

IF ANYONE in the world has a natural right to put out a questionnaire it is surely The Mentor. For ten years The Mentor has devoted itself to giving information. Here is our questionnaire—and it is planned to be a *fair* one. It was prepared not with the thought of popping trick questions at people, or—as Mr. Edison has done recently—catching college-bred men "off their game," but with the simple purpose of drawing out the knowledge that *any well-informed* individual *ought to have*. The answers to most of these questions may be found in numbers of The Mentor—all of which are in print and obtainable.

1. Who wrote the Declaration of Independence?

2. How many states are in the United States?

3. What is Magna Charta, and what rights did it secure?

4. What is the highest mountain of North America, and who climbed it?

5. What are the planets in our solar system?

6. What animal or flower is associated with each of the following countries: France, England, Scotland, Russia, Ireland?

7. What is the highest mountain in the world, the longest river, the greatest lake, the largest island, the highest structure?

8. Who was the Maid of Orleans, the Little Corporal, the Iron Chancellor, Le Grand Monarque, the Scourge of God?

9. What was the original language of the Old Testament? and of the New?

10. What is the Holy Grail?

11. Who wrote "America," "Home, Sweet Home," "Psalm of Life," "Thanatopsis," "The Raven," "Old Sweetheart of Mine," "Recessional," "Crossing the Bar," "Lady of the Lake," "Rip Van Winkle," "In Flanders Fields," "Poor Richard's Almanac," "The Tempest"?

12. Who painted The Sistine Madonna, The Last Supper, Baby Stuart, Simplicity, The Night Watch, The Angelus, The Horse Fair, Breaking Home Ties?

13. Who designed St. Peter's, Rome; St. Paul's, London; St. John the Divine, New York; Brooklyn Bridge; the Capitol, Washington?

14. Who modeled The Thinker, The Lion of Lucerne, The Greek Slave, Cupid and Psyche, Statue of Liberty in New York Harbor?

15. What did the following persons do to make them famous: Gilbert Stuart, Thomas Chippendale, Charles Gounod, Luther Burbank, Pasteur, Cecil Rhodes, Magellan, William Tell, Charles Goodyear, Eli Whitney, Elias Howe, S. F. B. Morse, Cyrus Field, Martin Luther, Guy Fawkes, Amundsen, Puccini, Lewis and Clark, Simon Bolivar, George Stephenson, Josiah Wedgewood, Balboa, John Sargent, Galileo, Molière, Garibaldi, St. Gaudens, Goethals, Isaac Newton?

16. What are the following, and where are they: The Parthenon, The Taj Mahal, The Pantheon, The Alhambra, The Madeleine, Christ of the Andes, The Sphinx, Bridge of Sighs, "The Cheshire Cheese," The Escorial, Hall of Mirrors, Elgin Marbles, The Bastille, The Vatican, The Laocoön?

17. Who were these women: Anne Hathaway, Becky Sharp, Amy Robsart, Hester Prynne, Anne Boleyn, Marie Antoinette, Nell Gwyn, Florence Nightingale, Minnehaha, Ramona, Edith Cavell, Madame Récamier, Betsy Ross, Scheherazade, Meg Merrilies, Isolde?

18. Who were these characters in literature: Sam Weller, Jim Bludso, Jean Valjean, Leatherstocking, Bill Sykes, John Ridd, Huckleberry Finn, Enoch Arden, Rochedes, Henry Esmond, John Halifax, Simonides, Rienzi, Rob Roy, Launcelot, Sydney Carton, D'Artagnan?

19. Where are the following situated: Death Valley, Garden of the Gods, Natural Bridge, Caves of Luray, The Mojave Desert, The Everglades, The Giant's Causeway, "Old Man of the Mountain," Dead Sea, The Golden Horn, The Trossachs, Gatun Dam, Mount of Olives?

20. Who uttered the following: "Veni, vidi, vici"? "England expects every man to do his duty"? "Government of the people, by the people, for the people"? "Liberty and Union, now and forever, one and inseparable"?

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THE OPEN LETTER

Why should the word "Friction" be taboo with so many of us? A little friction now and then doesn't hurt—it helps. Soothing oils make life run smoothly and pleasantly, but friction, after all, is the important agent of efficiency in this work-a-day world. Friction accomplishes more in the building up of things than oil.

The man that sets out to slide smoothly through life on a well-oiled track is ever in danger of losing his footing and slipping on his own oil into the limbo of oblivion. The man without passionate purpose is only a latent force, a mere possibility, "like a stone waiting for a blow from iron to give forth sparks."

★ ★ ★

Life needs plenty of oil—but it also calls for a full measure of *grit*, and grit means friction. It is friction that makes the wheels go round.

The locomotive engineer oils the internal parts of his engine, but he would get nowhere if it were not for the friction of his engine wheels on the track. And when his wheels slip and slide, he runs sand on to the track to make *more* friction. He knows that he can only climb up-hill by friction; and that the only means by which to check and control his engine on a down-grade is friction.

The engineer of a locomotive knows that —and so does every other kind of engineer, and every man of achievement in every line of endeavor.

★ ★ ★

When an organization of any kind gets to be an assembly of easy, acquiescent individuals who give "yes, yes" to each other, like nodding china mandarins on a mantel, that organization is headed for the down-hill grade—and it cannot be saved by oil. It is only when someone comes out with a firm "no," in a spirit of well-timed opposition, that things begin to move. There is nothing more pregnant with results than an honest and earnest difference of opinion; there is nothing that clears the air better than an intelligent, forceful clash of mind on mind. It is when two forces—in humanity or in machinery—act and react on each other that we get real practical results. It takes the rub of two sticks against each other, the rasp of flint on steel, or the scratch of a match on sandpaper to produce fire—and fire means heat, light, power, and all that makes life vivid and glowing.

FRICTION

is not always mere wear-and-tear. It is often the "healthy rub that makes things brighter"—the resisting force that makes things go.

★ ★ ★

Not that friction is *all* there is in the making of things. Too much friction may mean the *unmaking* of things. One may spill sand not only on the track but all through the works. The essential fact, however, is that, in all human affairs, there is a place for sand as well as oil.

The old Romans hit it right centuries ago and crystallized it in a phrase: "*Suaviter in modo, fortiter in re*," "suave in manner, firm in fact," or "temperate in method, but resolute in action" —in brief, "oil in the works, sand on the track."

W. D. Moffat

EDITOR

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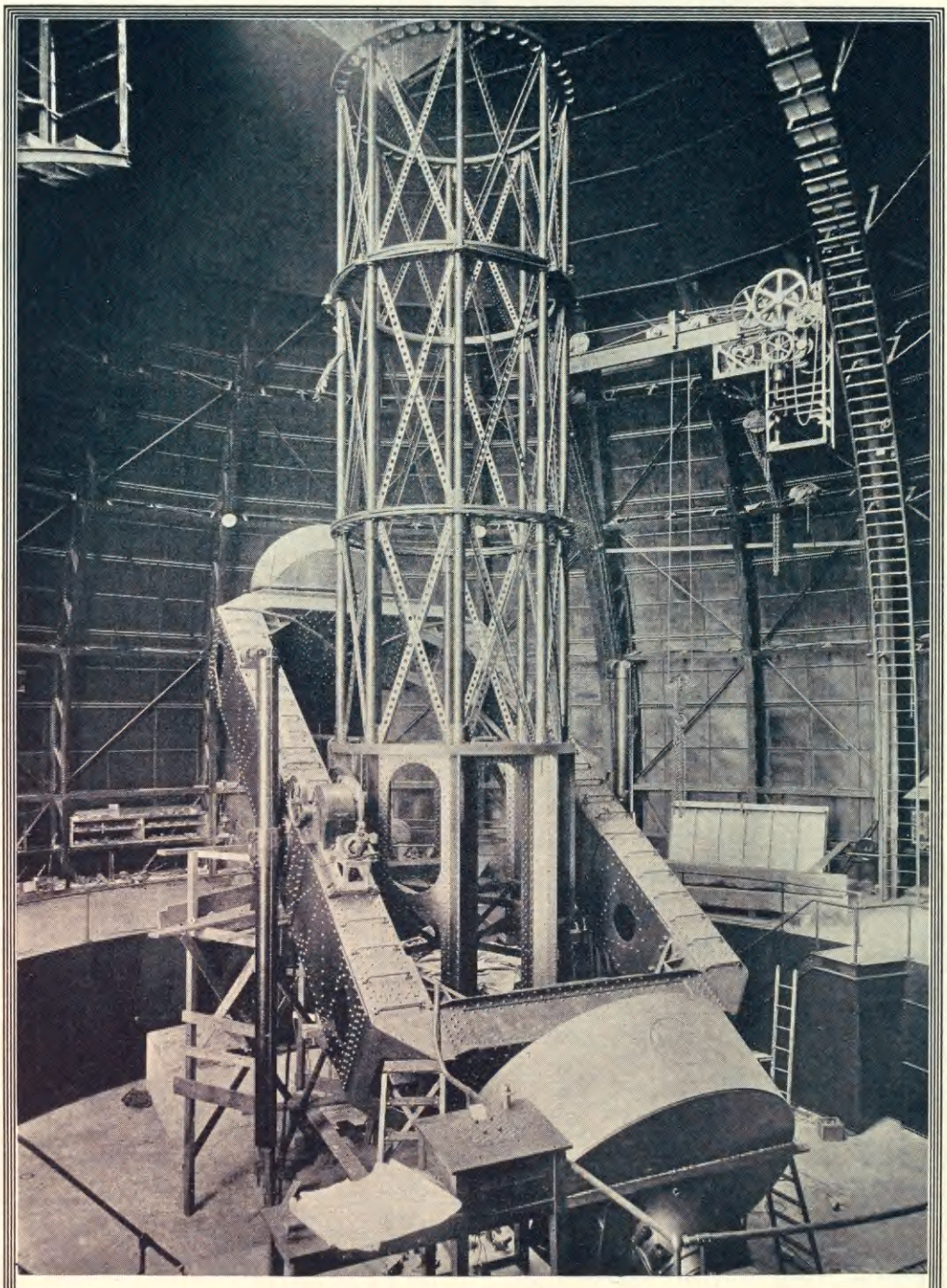

The King of Reflecting Telescopes

Mt. Wilson Solar Observatory, California. This giant mirror—101 inches in diameter—has revealed hidden marvels of the sky and betrayed to students of the celestial highways hitherto unsuspected secrets

SEP 8 1921

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THE LATEST MARVELS OF ASTRONOMY

By GARRETT P. SERVISS

IT IS the purpose of this article to point out the nature and extent of the startling and almost revolutionary discoveries that have been made within the last few years.

Let us begin with a brief statement of what was, until but yesterday, the generally accepted view of the structure and dimensions of the starry universe of which our solar system forms a very minute part.

The first important attempts to learn the construction of the heavens and to fathom the star depths were those of Sir William Herschel, who died a century ago. Everybody knows that strangely impressive feature of the night sky, called the Milky Way, or the Galaxy, which surrounds the entire firmament, and, in moonless midsummer night, illuminates with a lambent nebulous light, like the phosphorescence of the ocean, the southern part of the sky, from the beautiful Northern Cross and the glittering Eagle overhead down to the star gems of Scorpio and Sagittarius just on the horizon. This "highroad to Jove's court," which even Galileo's telescope had shown to be sprinkled with stars as thick as dust, Herschel regarded as indicating, by the effect of perspective, the plane of a vast stellar stratum of which our sun is a member, though situated somewhat aside from the center.

Herschel's first impression was that the stars were nearly uniformly scattered throughout the supposed flat stratum, somewhat like the flakes in a steady snowfall. If such a snowfall were confined to a long, narrow vertical stratum, an eye looking out of it from somewhere near the middle would see the flakes thinly scattered when the view ranged out through the sides, but densely crowded when the eye followed the long axis. It was found, however, that this supposition did not correspond with the

details of the Milky Way, such as its subdivision into minor streams and offshoots, its rifts and vacancies, its dense, cloud-like masses, etc. Accordingly, while the opinion continued to be held that the stars, as a whole, are contained in a region of space shaped like a flat disk, or a broad, relatively thin lens, whose central plane coincided with that of the Milky Way, yet the Milky Way itself came to be considered as a ring, or garland, of clustering stars surrounding, afar off, the part of space where we dwell. Another description of the Milky Way is that of a complicated, and partly broken, spiral, composed of millions of stars, encircling us at a great distance, our sun being situated among a scattered cluster of nearer stars in the midst of the relatively open space within the ring, or spiral. This whole system, including both the Milky Way and the stars within its circle, as well as any stars that may lie beyond that circle, was, and is, regarded as having the flattened, or disk-like, shape already mentioned.

Photographed at Yerkes Observatory, October, 1901

A Cloud of Glowing Vapor

Known to scientists as a nebula. There are uncounted thousands of these gaseous scarfs flung across the heavens

There is another great general fact, long known to astronomers, which we must consider.

In addition to the stars—all of which are suns more or less like our sun—we now have to take into account the existence of other objects. First, the nebulæ, of which there are two widely divergent classes. One class, the first discovered, consists of faintly glowing cloudlike phenomena which the spectroscope reveals as incandescent gaseous masses of enormous size, whose most characteristic component appears to be a strange element, unknown on the earth or in the sun, that imparts a greenish tinge to their light, and called, because it is found only in them, "nebulium."

Another class consists of even more wonderful objects, the so-called spiral nebulæ, whose shapes are suggestive of half-wound-up springs, whirling fireworks, luminous maelstroms, bursting flywheels, and other forms associated with the effects of centrifugal force. These have been known in large numbers only since the opening of the present century, and particularly since the application of photography, on an ever-increasing scale of success, in astronomical investigations. The spiral nebulæ differ fundamentally from the other class, since their spectra indicate that they are not composed of incandescent gas,

but that their substance is intermingled, perhaps, with gases, partly solid or liquid, so that they may, really, consist of stars in various stages of development. Their distances are very great.

Photographed at Mount Wilson Observatory, April, 1910

A Globular Star-Cluster

Lying outside, but distinctly related to the Milky Way

There is yet another, and still different, class of celestial objects that play an extraordinary rôle in the universe—the "globular star-clusters." A globular star-cluster consists of a compact-looking swarm of giant suns, perhaps a million in number, thousands of which individually exceed our sun from one hundred to one thousand times in actual brightness, while the distance of the cluster is so immense that all of its members blend their light into a hazy speck, often so faint as to be barely visible even with the largest telescopes. As in the case of the nebulæ, most of our knowledge of these great sun-clusters is due to photography.

Now, all of these various objects—the stars composing the Milky Way together with the stellar system that surrounds our sun inside the Milky Way; the nebulæ; and the globular star-clusters—are found to be very significantly arranged with respect to one another. They universally obey some great law of relationship which subordinates them to the galactic plane—that is, the middle plane of the Milky Way—which serves as a sort of central framework for the whole system. But this does not mean that these different classes of objects all lie in, or close to, that plane. Far from that being the case, it is the stars only that crowd into the galactic stratum, while the spiral nebulæ, and possibly also the globular star-clusters, keep out of it, and generally far away on both sides of the plane. The gaseous nebulæ, however, are more closely associated with the stars.

Photographed at Mount Wilson Observatory, August, 1910

A Remarkable Photograph of a Nebula in Spiral Form

Little was known of these phenomena until the camera came to the aid of the telescope

We now turn to the new views of

the universe, with their suggestions of illimitable distances, appalling velocities, mysterious movements, that seem co-related, and wonderful transformations under control of forces, the nature of some of which can only be guessed at, while their combination presents to the imagination a picture, fascinating through its impression of the working of some grand law of the cosmos, hitherto undreamed of, and still no more than glimpsed in its effects.

Photographed at Mount Wilson Observatory, November, 1916

Nebula—Presumably Spiral. Photographed edge-on

Many of these views are the result of work and study centered at the Mount Wilson Observatory in California, whose unrivaled collection of powerful instruments of observation together with its remarkable staff of investigators, reinforced opportunely by co-laborers from other observatories, has placed it at the forefront of contemporary astronomical advance. What follows is based largely upon papers published at various dates from 1917 to 1921 by Dr. Harlow Shapley (now of the Harvard Observatory); but he is in no way responsible for the form in which the subject is here presented.

In the first place, the old ideas about the dimensions and boundaries of the starry universe have lately been expanded to an almost incredible extent. This is due to novel methods of determining the distances of celestial objects. Until the other day astronomers were dependent for their knowledge of celestial distances upon the method used by the surveyor on the earth, who first measures a base line, then takes sights upon a distant object alternately from the opposite ends of the line, carefully ascertains the angles which the two lines of sight make with the base, and from these data, by a simple trigonometrical rule, calculates the distance of the object.

Right here let us introduce, and once for all define, an important astronomical term, "Parallax." The parallax of a distant object is the angle between the two sight lines of the surveyor where they meet at the object. If you know that angle, together with the length of the base, the distance of the object falls into your outstretched hand like an apple from a shaken branch.

Now this is the angle that the astronomer tries to measure when seeking to learn the distance of a star, and in order to have the angle of a measurable size he must take an enormously long base line. Nature furnishes this by the annual revolution of the earth around the sun. The opposite ends of a diameter of the earth's orbit are 186,000,000 miles apart, and the astronomer, without any trouble to himself, is carried from one end to the other of that diameter every six months. In principle then, all that he has to do is to take two looks at his star, six months apart, and the shift of the star on the background of the heavens, caused by

his change of place in space, gives him the parallax angle.

This trigonometric method is still the surest in its results for stars whose distance does not exceed a few trillions of miles, but the vast majority of the stars are so remote that their parallactic angles are too minute for trustworthy measurement.

This means that the gigantic base-line span of 186,000,000 miles is virtually nothing in comparison with the distance stretching between such stars and the earth. Although the principle of parallax was understood in ancient times, yet the first actual measurement of a stellar parallax occurred less than a hundred years ago, and until within a few years past, there were only about a hundred stars whose parallaxes had been even approximately ascertained. As lately as 1914, the English astronomer, Eddington, affirmed that, in all, probably not more than two thousand stars were near enough to afford a practically measurable parallax. He set the limit of such a parallax at 0.05″ (five hundredths of a second of arc), which would correspond to a distance of about four hundred trillions of miles.

Photographed at Mount Wilson Observatory, June, 1910

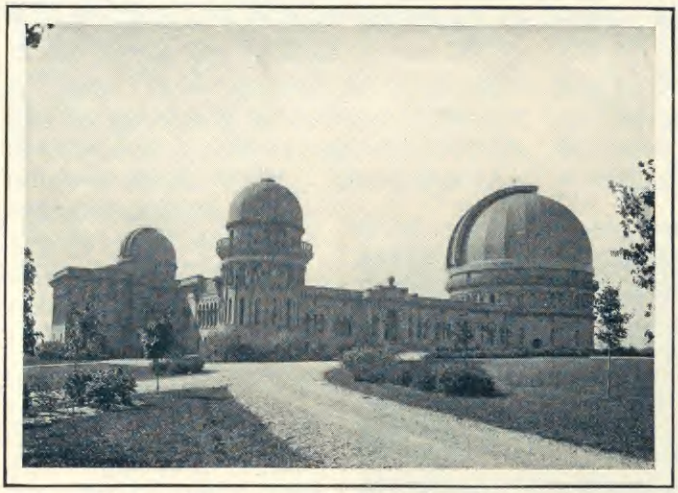
A Nebula Like This is Millions of Times Larger Than the Earth

But now, through other methods, we have parallaxes based on *millionths* of a second of arc—in one case only, 0.000015″, corresponding to a distance of more than 1,260 thousand trillions of miles. This particular object, as we shall see later, happens to be a globular star-cluster.

As an example of the newer methods, a correlation has been found between the absolute magnitudes and the relative intensities of the lines in the spectra of certain types of stars, which affords a means of calculating their distances. The absolute magnitude of a star is the brightness that it would have if seen from a distance corresponding to a parallax of 0.1″ (one tenth of a second of arc). At that distance our sun would be of magnitude 4.7″, that is, a small naked-eye star; but there are thousands of stars in the globular clusters, besides many separate ones, of absolute magnitude 0, or greater—the equal of seventy-five suns or more—and a star of absolute magnitude 5 exceeds the sun about 7,600 times.

The apparent, or angular, diameter of a celestial object is correlated with its distance, and if, as appears to be the case with globular clusters, a whole class of objects have very nearly the same actual diameter, while the apparent diameters vary inversely with distance, then the relative distance of each object of the class can be gauged by measuring its angular diameter.

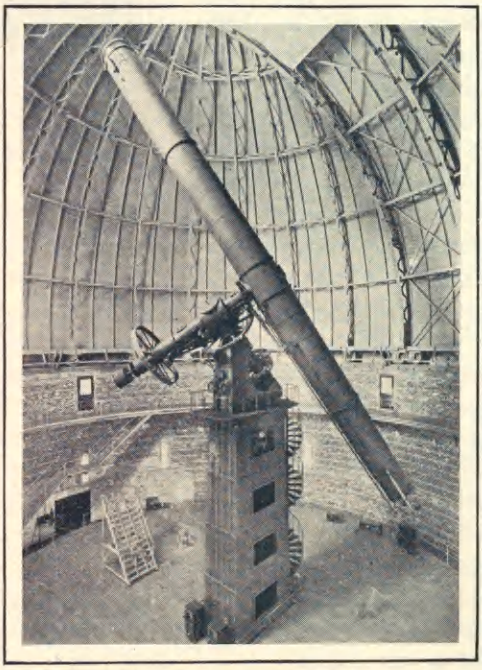
A lively interest has lately been excited in this matter of stellar dimensions by the success at Mount Wilson of Prof. Michelson's interferometer method in measuring the apparent diameter of the bright star



Yerkes Observatory, Williams Bay, Wisconsin
Where very important astronomical work is done—especially in stellar photography

Betelgeuse in Orion, and thence deducing its real diameter in miles. What was done in this case was simply to apply, in a refined manner, and with exceedingly delicate special apparatus, the same principle that a surveyor would use to get the size of a distant inaccessible object. He would measure the angle between the lines of sight drawn from his eye to opposite ends or sides of the object. That would give him the angular diameter, and he could immediately translate this into actual diameter if he knew his distance from the object. The Mount Wilson measure showed that *Betelgeuse* has an angular diameter of 0.047″. Its parallax was already known to be 0.018″, corresponding to a distance of about 1,055 trillions of miles. Now, by the rules of circular measure, an object having an angular diameter of 0.047″ must be at a distance about 4,388,000 times its actual diameter; so, dividing 1,055,000,000,000,000 by 4,388,000, we get, in round numbers, 240,000,000 miles *as the diameter of Betelgeuse*. This giant star has nearly the same diameter as the orbit of the planet Mars around the sun!

It is now known with practical certainty that the size of the sidereal system is at least a *thousand times greater* than it has hitherto been supposed to be. Still retaining the idea of a more or less flattened, or disk-like, shape for the whole, it has been shown that, in its longest dimensions, the vast system of the stars, in which our sun, and indeed our entire solar system, is as a speck of dust, has an extension of not less, and perhaps much more, than 100,000 *parsecs**, or say 325,000 light-years. These figures depend upon measurements and calculations

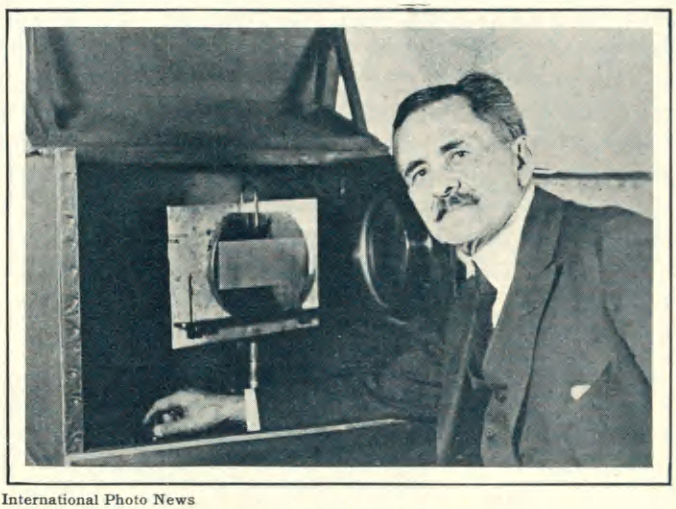


The Forty-Inch Refracting Telescope
Yerkes Observatory, Williams Bay, Wisconsin. Built in 1897. It has never been surpassed

*Parsec is a comparatively new astronomical unit of measurement whose equivalent in miles is 19,182,000,000,000, or in round numbers 19 trillions. It is the distance corresponding to a parallax of one second of arc (1″). Light-year is an older term expressing the distance that light travels in the course of one year. This distance is, in round numbers, 5,860,000,000,000 miles.

whose results are probably trustworthy to a high degree of approximation. But beyond them go estimates, not similarly verified, which place the possible distance of some celestial objects at millions of light-years!

But let us consider only the figures that may be relied on. They are sufficiently astonishing. The most distant object, as far as known at present, is the globular star-cluster N. G. C. 7006. The letters "N. G. C." mean New General Catalogue, and the figures following express the number of the object in that catalogue. It is the same object mentioned a little way back as having a parallax of 15 millionths of a second, corresponding to a distance of 1,260 thousand trillion (or 1,260 quadrillion) miles. One cannot form the least idea of so stupendous a distance as that without approaching its consideration by graduated steps. First try to get at it in this way: The distance of the sun is 93,000,000 miles. That, enormous though it be in comparison with distances on and around the earth, is comprehensible. We are used to such figures as millions and even thousands of millions. But now consider this: the distance of the globular star-cluster N. G. C. 7006 is more than thirteen and a half thousand million times greater than the distance of the sun! Or attack it in another way, which will appeal to the imagination of those who are used to dealing with numbers and their squares—who know, for instance, that an income tax of $100,000 if simply squared would become $10,000,000,000. But, if you square the sun's distance of 93,000,000 miles, you will get a number *less than one 145th part of the distance* of the globular star-cluster N. G. C. 7006! Look at it in another aspect, that of the time required to traverse such a distance. If you could take flight on a cannon-ball traveling half a mile per second, you would be nearly six years in going from the earth to the



International Photo News

Professor Albert A. Michelson

Seated before one of the instruments similar to those used in measuring the diameters of stars trillions of miles from the earth

Lick Observatory

Founded by James Lick. It occupies a mountain top near San José, California. Its 36-inch telescope was completed in 1888

sun. But to keep on until you reached N. G. C. 7006 would require *eighty billion years*. Even light, which travels 5,860 billion miles in a year, would take more than 215,000 years in making that journey! If a giant could stride one step from the earth to the sun he would have to make thirteen and a half billion such steps in going to N. G. C. 7006. A man could walk around the earth on a great circle with 44,000,000 three-foot strides, while the giant would have to make more than 300 times that number of *ninety-three-million-mile strides* in order to reach his goal!

The Snow Horizontal Telescope Building

This structure contains a great horizontal telescope specially designed for studies of the light of the sun. It was given to the Yerkes Observatory by Miss Snow twenty or more years ago, and later was located at the Mount Wilson Observatory, California

There are other globular clusters almost equally remote. In short, the globular clusters, as a class, are by far the most remote of all objects in the universe, with the possible exception of the mysterious spiral nebulæ, of which we shall speak a little later.

And then the size of these clusters is as gigantic as their distance. There are good reasons for thinking that all of them have nearly the same linear dimensions. According to Harlow Shapley, the cluster known as Messier 13 (this is the famous cluster in Hercules) has a diameter of 450 light-years, or more than two and a half quadrillion miles, and contains probably more than 50,000 stars intrinsically brighter than our sun, while all of the stars that appear ordinarily on its photographs are individually more than 200 times as bright as the sun. The total number of stars in this cluster, as in others of the globular type, cannot be counted, because of their increasing density toward the center, but reasonable estimates show that there must be hundreds of thousands and possibly a million of them, the most of which are giants compared with the sun. But now again we come to something still more astonishing.

We have seen that the globular clusters are not found in the Milky Way, or the galactic stratum, but far away from it on each side of its median plane, both above and below that plane, that is, north and south of it.

This avoidance is, in itself, very remarkable, for why should these great dense star-clusters appear to keep away from the region where the other stars are assembled in hundreds of millions? Are they really absent, or are they hiding behind distant nebulous clouds? But that is only the beginning of the enigma. Perhaps the most startling discovery is that the globular star-clusters are swiftly moving—one is tempted to say plunging—from both sides, toward the galactic plane, where the stars abound. When the investigators first found

this out, I imagine, they could not trust their own results, but must have worked the data over and over again, so unexpected and incredible seemed the conclusion to which they were led.

But that conclusion became more strange the further it was followed. It will be well here to quote a few sentences from Harlow Shapley:

The present evidence suggests that globular clusters as a class may be falling rapidly into the regions rich in stars. There appears to be no very obvious or reasonable escape from the conclusion that some clusters at least are destined to enter the mid-galactic region. With such great velocities and masses it seems incredible that clusters would not easily pass through the stratum of stars. Further observations may reveal survivors receding from the galactic plane, and we may be able to examine them for the effects of the passage. There is, however, suggestive though incomplete evidence that globular clusters are gradually dissolved in the mid-galactic regions. As a general but not infallible rule the clusters at moderate or high distances from the galaxy are compact; the nearer ones are open. The distribution of stars in open galactic clusters is possibly a second indication of the gradual dissipation of globular clusters in the Milky Way.

In connection with this it is suggested that the famous group of stars called the Pleiades (Tennyson's "swarm of fire-flies") may be a relic of a great globular cluster which ages ago plunged down into the galactic segment and was, so to speak, torn to pieces, its smaller stars being dissipated "under stresses such as those prevailing in the galactic region."

In view of such amazing conclusions one cannot help wondering about the ancient history and "the most disastrous chances" of our little sun, brought in, perhaps, as an inferior member of a mighty globular horde from the far desert stretches of ethereal space to the glittering crowds of the galactic segment, and there flung off and lost in the throng of strangers, most of them equally alien in origin.

As to the nature of the forces concerned in these strange shaping processes by virtue of which the universe is still evolving, the best light as yet available is furnished by another quotation from Shapley:

As a provisional working hypothesis, which is supported by numerous observed conditions, and may be further tested without difficulty, it is suggested that the obvious dynamical equilibrium of a globular cluster has been acquired originally at a great distance from external perturbing forces and is an extremely delicate adjustment that breaks down under stresses such as those prevailing in the galactic region; further, that faint stars in globular clusters are of small mass and of more than average velocity, and in their orbital motions frequently attain great distances from the center. When the globular cluster approaches a disturbing body as massive as the general galactic system such stars are of course most easily lost and intermingled with galactic stars. On the other

Photo by Press Illustrating Service

The Giant Mirror of the Mt. Wilson Reflecting Telescope

The original block of glass for this largest of reflectors weighed 4½ tons, and required three years in the grinding. It measures 101 inches in diameter and is over a foot thick at the edge

hand the massive cluster stars, which are mostly of high luminosity, having low peculiar velocities, and maintaining in their subsystem a high degree of stability, retain their organization longer in a disturbing field and, except for rare and accidental encounters with galactic stars, undergo as a single unit the general perturbations of the galactic system, for myriads of years they travel together as a Pleiades-like group among the galactic stars.

Another surprise comes when attention is turned to the spiral nebulæ. These, like the known globular clusters, lie outside the galactic segment with its crowds of stars, but instead of falling in toward it they appear *to be fleeing away* from it with velocities of hundreds of miles a second. Moreover, they occupy a general position with regard to the Milky Way that is in contrast with the position of the globular clusters. In the region where the spiral nebulæ approach nearest to the galaxy, globular clusters are entirely absent; and it is very significant that in the opposite region of the sky, where the globular clusters and clouds of stars most abound, the avoidance of the Milky Way by spirals reaches its maximum.

The Bruce Photographic Telescope

This wonderful instrument was made by John A. Brashear, for stellar photography. The two photographic lenses are respectively "doublets," that is, the objective is composed of four lenses, with an aperture of 10 inches and a focal length of 50 inches; the mounting also carries a Voigtländer doublet of 6¼ inches aperture and 31 inches focus. These cover plates 12 x 12 and 8 x 10 inches and produce clear, sharp photographic results

The foregoing conditions suggest as a preliminary hypothesis that the discoidal galactic system originated from the combination of spheroidal star-clusters, and has long been growing into its present enormous size at their expense. The evidence further suggests that the galactic system now moves as a whole through space, driving the spiral nebulæ before it and absorbing and disintegrating isolated stellar groups. Apparently the suggested interpretation requires that two types of sidereal organization prevail generally throughout extra-galactic space: spiral nebulæ and stars of known types assembled for the most part into globular clusters; and while the globular clusters now known are, at least potentially, members of the galactic system, the spirals are not members, rather being general inhabitants of extra-galactic space. The hypothesis demands that gravitation be the ruling power of stars and star-clusters, and that a repulsive force, radiation pressure, or an equivalent, predominates in the resultant behavior of spiral nebulæ.

How extraordinary is the picture of the universe thus presented! The great galactic system, driving through space like a flat shining raft, built up of hundreds of millions of stars—our little sun being lost among them—and drawing in from either side, and from distances of hundreds of quadrillions of miles, vast stellar organisms, of a globular shape, on which it feeds and grows, while from before it, like frightened flocks of strange winged creatures, hatched in the midst of the mysterious and boundless ether, flee the spiral nebulæ, speeding madly on—on—on.

THE LURE OF THE STARS

ASTRONOMY AND GEOGRAPHY

From a mural painting by Will H. Low, in the New York State Education Building. Albany

Minerva, goddess of wisdom, encircles with her arm a young child, while through the telescope she directs his gaze to the "clear night of stars" spread above him; at sight of which the child clasps his hands with a gesture of wonder. Near at hand a seated youth, holding the symbolic lamp of research, is bent over a large globe following the path of man over the traveled earth.

THE LURE OF THE STARS

The Story of Man's Search of the Sky

By A. A. HOPKINS, Editorial Staff of The Scientific American

THE stars are the great landmarks of space, and from the beginning of time, peoples of all lands have fallen under their spell. Emerson says: "If the stars should appear one night in a thousand years, how men would believe and adore and preserve for many generations the remembrance of the city of God which had been shown." But the starry objects are so common; they are at our service on every clear night, so we rarely think of them. In all ages, however, there have been observing and thoughtful ones who have been asking themselves questions about the universe, and trying to find an answer in the stars.

PARTIAL VIEW OF STONEHENGE

Showing the column behind which the sun rises on June 21st

ANCIENT STAR SEEKERS

Primitive man, after satisfying his material wants, had time on his hands and he employed it in speculating about those features of the universe with which he came into daily contact—notably the blaze and heat of the sun, and the cool silver light of the moon. Certain facts in the heavens started fancies and legends which, in time, crystallized into well defined myths. The first of these facts must have been the record of the passing of time, and the seasons, with their varied relations to the cultivator of the soil. Then the primitive mariner soon found the Pole Star an unwavering guide. This speculation on the heavens begot mysticism, idolatry, and astrology, which Kepler called the "foolish daughter of a wise mother." This seemed to keep down the scientific aspect of the celestial objects for a time. Noah was accredited by the Chaldeans with their knowledge of the stars. Astronomy united with history and archaeology in pointing to the Euphrates Valley, and the region of Mt. Ararat as the home of those who originated the ancient constellation figures. We have been able to fix approximately the date of these early astronomers by the results of their labors as they have come down to us, and put the date at 2800 B. C. The division of the year into twelve parts indicated by the signs of the Zodiac dates from 3000 B. C. The ancients had queer ideas as to the constellations. They had nothing to deter them, so they calmly designated one part of the heavens as the "Sea" and peopled it at once with mythological marine creatures such as fishes, whales and dolphins.

ARMILLARY SPHERE

An ancient Chinese astronomical measuring instrument

In another part of the world we find the same twelve divisions used, but transformed into what is known as the twenty-eight mansions of the moon. This was China, and we derive the word "celestials" after the celestial spaces into which the empire was divided.

Reproduced from "Pictured Knowledge"

GROUPS OF CONSTELLATIONS

On the Great Bear's left, the man with the whip is Auriga, the Charioteer. He is carrying Capella, the Goat, who nursed Baby Jupiter. Perseus, with his shield, carries the head of Medusa of the Snaky Locks, and is about to rescue the beautiful Andromeda, who is chained to a rock. In the chair is Cassiopeia, mother of Andromeda, who, after Andromeda's rescue, was chained to her chair and swung round and round the pole. This constellation is the well-known "W" which you can easily find. By Cassiopeja's feet is her husband, Cepheus, King of Ethiopia. Only the head and forelegs of Pegasus, the Winged Horse, are represented in the sky. The Sea Goat with the fish's tail, is Capricornus. On the right of the picture, Bootes carries his sickle, herdsman's crook. Next is Hercules with his club. Below Hercules is Ophiuchus, the Serpent Bearer. Near the center of the sky is the Swan. Next is the Winged Lyre and below Aquila, the Eagle, carries Ganymede to Jupiter to be his cup bearer

Science made notable progress in the hands of the Babylonians, particularly when astronomy is considered. Divination, or the ability to foretell the future, was a priestly function, and this was carried to considerable lengths. The priests also noted the position of the stars and planets, which were in turn used to foretell the future. In the hands of the Chaldeans astrology, for it was not yet astronomy, made further progress. The circle was found to contain 360 degrees and twelve groups of stars were laid out in what we call the "signs of the Zodiac.' For the first time

KEPLER (1571-1630)

COPERNICUS (1473-1543)

GALILEO (1564-1642)

the sky was mapped. Astrology was the mother of astronomy and is far from being dead today, as we may see from the pile of prophetic almanacs which we see on book-sellers' counters in the fall, and we still use, even those of us who do not believe in astrology, such expressions as his "lucky star," or an "ill-starred undertaking." The five planets —Mercury, Venus, Mars, Jupiter and Saturn, were specially identified with the Babylonian gods, and as they proceeded westward their names were changed. The celestial observations under the Chaldeans became more frequent and accurate, so that in time even an eclipse could be foretold, and this knowledge descended in time to the Greeks. The ancients knew five planets, Mercury, Venus, Mars, Jupiter and Saturn, to which we add the more modern discoveries of Uranus and Neptune.

In the clear Egyptian sky the stars are wonderfully bright, and the inhabitants of the Nile Valley must have observed them in very early days. The first observatories established on the banks of the Nile seem to have belonged to the temples of the sun. The high priests of "Ra," the sun god, styled themselves "The great of sight"; that is, the chief of those who see the sun, those alone who beheld him face to face, and who from the earliest times employed themselves in preparing maps of the heavens. The priests of other deities followed their example, and in the earliest dawn of history there was not a single temple from one end of the Nile Valley to the other that did not possess its official astronomers, called "watchers of the night." Evening by evening on the high terraces above the shrine, or the narrow platforms over the temple entrances, they watched the movements of the constellations across the celestial vault above them, and carefully noted the slightest phenomena of the sky. Some parts of the chart of the heavens known to observers at Thebes between 1800 B. C. and 1209 B. C., have been found carved on ceilings of temples, and especially in royal tombs, and have thus survived to the present time.

The Greeks were great astronomers as well as physicists. The islands in the Aegean Sea absorbed a great deal of Egyptian and Phoenician culture and the knowledge of astronomy was quite well advanced for the time, but it remained for Thales of Miletus to really stabilize the new science. He could calculate eclipses with fair accuracy, and as the eclipses actually occurred, he grew in fame accordingly. Thales, Aristotle, and Hipparchus, were giants in science. This is peculiarly true of Hipparchus. The work which he performed really laid the foundations for the science of exact astronomy as distinguished from mere star gazing. He discovered the precession of the equinoxes; and he calculated and formed the first regular catalogue of stars.

The Druids are usually credited with being the earliest English astronomers, but if we are to believe the mute testimony of that prehistoric circle of boulders on Salisbury Plain, England, known as "Stone-

SPIRAL NEBULA

From photograph taken at Mount Wilson Observatory, March, 1910

henge," that primitive construction was built, perhaps, 2000 years B. C., and whoever laid it out knew enough about astronomy to arrange the stones, so that, on June 21st, the sun rises over the top of one of the stones in line with the altar. Probably the whole affair was a huge sun dial, and recent restorations will preserve it.

Men of the early days were satisfied to see the sun, the planets, and the stars without troubling much about what they were, or how their apparent motion was regulated and measured. There was one man, however, who lived from about 100 A. D. on for seventy years. He conceived the idea that the earth was the center of the uni-

verse and that the sun and planets moved in circles whose centers themselves were in motion upon other circles. This man's name was Ptolemy and his system which was generally considered as reasonable for 1400 years, is called the "Ptolemaic" plan or system. His ideas, while interesting, were very confusing, and he was deceived by his senses into believing that there was a fixed earth. He did not believe that the earth was in motion because he did not feel it. He also thought the earth was much larger than any of the other heavenly bodies.

SIR ISAAC NEWTON (1642-1727)

The Arabs were good mathematicians and did not let the spark of astronomy, slight as it was, die altogether. The "Almagest," an important work by Ptolemy, was even translated into Arabic. In 1400 Ulugh Beg, a grandson of Tamerlane, and a Tartar prince, established an observatory at Samarcand, and with instruments that were new to the world at the time, made the second star catalogue, and the earliest that is worth much. Thus, the Arabs for many centuries kept the flame of astronomy alive, and by steady improvement in accurate observations increased the value of each successive set of tables.

Discovery was occurring in all parts of the world. Printing had been invented and a great impetus had been given to the exact sciences, and, of course, astronomy received its share of attention. Things drifted on until the middle of the fifteenth century, when we come upon the great name of Copernicus (1473–1543), who was born in Polish Prussia. He saw that the rotation of day and night could be explained just as completely by the rotation of the earth itself from West to East, as that of the whole universe from East to West. He began to destroy the whole framework of error which had existed for centuries by demolishing the objections to his theories, in advance. He pointed out that only relative motion is perceived by the senses, and that the air was bound to share the motion of the earth. He also had a more just appreciation of the enormous distance of the stars and he considered that they must be of enormous size (as they are). His theories were by no means perfect in the light of our modern knowledge; but he blazed the way for his followers and the great men who were broad enough to accept his revolutionary views. His book was not published until he was in the shadow of death, for he probably knew the turmoil he was preparing both for science and the church. Confirmation soon came from another source.

SIR WILLIAM HERSCHEL (1738-1822)

It was a noble Dane named Tycho Brahe, who claimed a high place in astronomy, by reason of his accurate observations. He is perhaps the most picturesque figure in all science. His contribution to the determination of the planets, etc., in the celestial sphere, was made at his observatory on a Danish island, where he conducted his observations, *without a telescope.* By a long series of careful planetary observations, he provided the materials for the next great advance, due almost as much to him as to the great Kepler. Although Johann Kepler may be regarded as the real founder of modern astronomy, we must pause for a moment to consider another great name which is a necessary link before Kepler, for he furnished the one thing which astronomy had lacked, an artificial aid to the human eye, now called the telescope. This was the great Italian Galileo (1564–1642). Before he made his epoch-making invention he

THE GREAT NEBULA OF ANDROMEDA

Our whole solar system occupies less space than the tiniest star speck in this picture

had demonstrated the laws of falling bodies by experiments which he had carried on from the "leaning tower" of Pisa. He also invented the pendulum, of so much value in our keeping of time, which is so important to astronomy. He heard that a lens had been discovered in Holland, and he at once set to work to try his hand with lenses in a leaden tube. He soon constructed a telescope which magnified "32 times"—about what we would now give to a child. Turning this crude affair to the moon, he discovered the irregularity of its surface. He also discovered the moons of Jupiter, Sun Spots, and other objects in the heavens. Galileo's story is one of the most romantic and pitiful in all science. He set up many milestones of progress, and gave Kepler (1571–1630) the tool which enabled him to confirm his discoveries. Kepler's laws are three in number and have been tersely expressed by Prof. Serviss as follows: First, that the orbits of the planets are ellipses, with the sun occupying one of the foci; second, that the radius vector (line joining the planet and the sun) sweeps over equal areas in equal times; and third, that the squares of the periods of revolution of the planets are proportional to the cubes of their distances from the sun.

NEWTON AND THE LAW OF GRAVITATION

Then came a long series of more or less important discoveries, but the stage was gradually cleared for the next great figure, who may be regarded as a Christmas present to the whole civilized world, for it was on Christmas Day, 1642, that Sir Isaac Newton was born—by strange coincidence, the very day of Galileo's death. Forced by the Great Plague to retire into the country, he fell to musing, in an orchard, so legend tells us, on the fall of an apple to the ground. He meditated upon the central force that keeps the planets in their orbits. It occurred to him that a force similar to that which causes a body to fall to the earth, might, by continually deflecting the moon from a natural straight path, constrain it to revolve about the earth. This was the germ of his law of gravitation, which has been admirably expressed by Prof. Serviss as follows:

"Every particle of matter in the universe

Above is a supremely successful photograph of the moon, made at Mount Wilson. It shows the great plain called *Mare Imbrium*, meaning "Sea of Showers." It has no water now, and may never have had. Mountains of the moon are also shown. At the right is a wonderful picture of the Pinwheel of Space, a Spiral Nebula. This great "Star Factory" is shown making up star balls and throwing them off billions of miles into space

MASTERPIECES OF ST

At the top, in the center, is a remarkable photograph of a solar eclipse, showing the "Corona" or circle of flames thrown out from the sun. Directly above is a picture showing what the Pleiades look like to the photographic eye. At the left is the Grand Nebula of Orion, the largest Nebula and the only one easily seen with the naked eye. These three pictures are notable examples of stellar photography at the Yerkes Observatory, Williams Bay, Wis.

LAR PHOTOGRAPHY

attracts every other particle with a force which is proportional to the product of their masses and varied inversely with the square of the distance between them." This has remained unchallenged until the advent of Prof. Einstein and his "Theory of Relativity."

Sir Isaac Newton also detected the composite character of light, which he analyzed with a prism, thus laying the great foundation for a great handmaiden of astronomy and chemistry—Spectrum Analysis. He just missed discovering the achromatic (or composite) lens. For once his sagacity left him and he went on another tack and invented the *reflecting* telescope, while the honors for perfecting the *refracting* telescope went to another Englishman, Dolland, in the next century.

Some of Newton's success must be attributed to what we would call in these unregenerate days his "press agent." This was Halley, the Astronomer Royal. He induced Newton to publish his treatise on gravitation and in his long life exerted a beneficial influence on the science. He will be chiefly remembered by his work on comets. It was he that predicted the return of what we now know as "Halley's Comet," knowing, of course, that he would not be among the living when the celestial visitor arrived seventy-five years later. Thrice since his death the light of the wayfarer has shone on his grave in Kent. Except in his own country Newton's theory was received with great hostility, but after half a century Voltaire published a short but clear and popular treatise on Newton's principal discoveries in optics and astronomy, and from this date, 1738, Newton's theories may be said to have held the field.

The science of mathematics gained enormously, especially under Euler and Laplace. The latter is the author of a very famous book called "Celestial Mechanics." We would find it hard reading now, but in spite of its mistakes and the author's many assumptions without adequate proof, it will still remain as a great landmark in astronomical literature. New mathematical fields were available since the time of Newton and Laplace and did much to put astronomy on a sound modern mathematical basis.

Laplace was the author of the Nebular Hypothesis, which contended that the solar system existed originally in the form of a nebula, which by cooling, condensing and revolving was formed into the sun, and rings of matter were consolidated into the planetary bodies; applied also to all the heavenly bodies. This idea was conceived in rude form by Swedenborg, perfected by Kant, Herschel, and at last, by Laplace. The more modern developments of the theory were of great use to evolutionists, and the principal men who have used the great arguments were Herbert Spencer, G. H. Darwin, and Thomas Crowder Chamberlin.

ASTRONOMY'S RAPID PROGRESS

We now come to the era of the observatories; the telescope became more than a toy. Observatories were established at Paris, Greenwich, and elsewhere, directed by skilled astronomers and supplied with the best instruments which the makers could produce with the available materials and optical skill. The great names of Flamsteed, Halley, Bradley, lead us to the Herschels.

William Herschel, born in Hanover, was a good musician and an excellent astronomer, but proved to be a poor soldier. He deserted and emigrated to England. He manufactured and perfected reflecting telescopes and was the discoverer of Uranus—that interesting planet whose eccentric behavior led to the discovery of another new planet, Neptune. William Herschel was ably assisted by his sister, Caroline, an astronomer of no mean order herself, and on the cold winter nights she recorded his observations made in the open-air observatory until the ink froze in the inkhorn. His distinguished son, Sir John Herschel, followed in his father's footsteps.

The Nineteenth Century opened auspiciously by the discovery of "Ceres" by the Italian astronomer Piazzi in 1801, thus filling up the gap between Mars and Jupiter. The age of the discoveries made by great individual astronomers was past, but the century was to see the invention of the spectroscope, of photography, the development of the telescope beyond the fondest hopes of the earlier men, and new disclosures in astronomy that astonished the whole scientific world. One of the noteworthy discoveries of the third quarter of the century was that of the relation between comets and shooting stars.

Comets are truly the ghosts of the skies, for they do not disturb the planets or their satellites when they pass by. They are self-luminous, and their brightness is probably

STAR CLOUD

A remarkable photograph showing white streaks of two meteors that flashed across during the camera exposure

increased by reflected sun-light. Many of these bodies are permanent members of our system and return regularly after a few or many years, at times determined by the astronomer; others only make the circuit once and pass into outer space. The earth is undergoing a constant meteoric bombardment, and little stones and particles of matter try to reach our earth but are usually burned up in the process. Though

GREAT NEBULA OF RHO OPHIUCHI

Lying in the Milky Way. This photograph by Prof. E. E. Barnard shows vacant lanes that seem to blot out the more distant stars. These vacant lanes are new discoveries made through the Bruce camera at the Yerkes Observatory

it has been calculated by astronomers that every day the dust of millions of meteors falls to the surface of the earth, yet the whole lot would probably not weigh a hundred tons. Meteors are the products of the breaking up of comets and consist of particles that certain comets have abandoned along their way. Occasionally a fine example like that in the American Museum of Natural History weighing a hundred tons is secured.

Expeditions were sent to the antipodes to map the southern heavens, or observe and photograph eclipses.

The best mechanical and optical talent was lavished on the wonderful instruments that swept the skies. We are indebted to an English optician named Dolland for the invention of the achromatic telescope, in which by a combination of lenses the troublesome color borders so destructive to good observation were eliminated. Dolland did away with the color distortion by making an objective of two lenses joined together by Canada balsam. One was of crown glass, the other was of flint glass. These two kinds of glass disperse light differently, and the two lenses were so put together that the one counteracted the color dispersion of the other. This invention occurred in the previous century, 1757, being the date, but it is referred to here while the refracting telescope is being considered.

The nineteenth century owes much of its astronomical progress to the great endowed observatories, where mechanical and optical perfection is only excelled by the great ability of the directors and observers. With instruments like those cited, if we were on the moon and looked at the earth, we could see the great pyramid of Cheops in Egypt as a dot, and New York's curious contour could be plainly recognized. With the help of these huge tools, costing vast fortunes and requiring years for their fabrication, the tiniest celestial bodies, millions of miles away from us are distinctly visible. Nearly every observatory has, in addition to the master instrument, smaller telescopes and countless attachments, and other instruments, photographic and spectroscopic.

The perfection of the telescope now went hand in hand with the splendidly equipped astronomers, and the last touch was given by photography, and later, by spectrum analysis, which opened an entire new world. Astronomy became now specialized, so we had comet-seekers like Encke, Bielia and Schiaparelli. Star catalogues multiplied, photographic star charting became of great importance, observatories pooled their efforts and divided the sky among them, and the outcome of their combined operations aimed at the production of a catalogue of at least 2,000,000 strictly determined stars together with a colossal map in 22,000 sheets. Stars have to be classified by their apparent light power, and this is measured by the "photometer." The splendid achromatic lenses of the famous Clarks of Cambridgeport allowed great discoveries of double stars.

From photograph by Prof. E. E. Barnard

BROOKS COMET OF 1911

The Bruce telescopic camera was timed to keep pace with the comet, hence the stars appear as streaks. Observe that the stars appear undiminished in brightness through the comet's tail, showing the diaphanous nature of the tail

SPIRAL NEBULA

Photograph made at Mount Wilson Observatory, March, 1910, showing clearly the great whirl that forms stars

The wonderful researches in astronomical photography carried on by Draper, Young, Campbell, Huggins, and others, have added vastly to our sum total of knowledge of the celestial world. The adoption in 1876 of the "dry" gelatine plate with its greater speed and general convenience was of great importance. It made long exposures possible so autographic impressions of such faint objects as nebula, comets, etc. Photographs of stellar spectra were multiplied and many "new" and variable stars were discovered, not by the telescope *but from the photographic negative.*

THE "NEW" ASTRONOMY

The so called "new astronomy" concerns itself with the individual peculiarities of suns and planets with their chemistry, their physical habits, and their modes of luminosity, rather than with the positions of the heavenly bodies in space, and the changes of this position with time, with which the earlier school of astronomy concerned itself. When Newton analyzed the sun's light by passing it through a glass prism, he was taking an early step in the vast field of spectrum analysis. Spectrum analysis is distinctly a development of the nineteenth century and it has profoundly altered our purposes of celestial inquiries. By analyzing the rays of light as they are dispersed on a screen by the prism of a spectroscope, the material elements —gaseous, and metallic—that go to make up the sun and stars can be determined. This laid the foundation for the far-reaching science of "celestial chemistry." These discoveries aided by the photographic camera and the "gratings" invented by Prof. H. A. Rowland, an American, has resulted in the detection of forty terrestrial elements in the sun. Stellar spectroscopy is now a recognized branch of astronomy. The investigation of sun spots, solar prominences, etc., all owe an enormous debt to Newton.

With the second decade of the present century one or two discoveries loom up very large in the astronomical horizon. Dr. Harlow Shapley's researches on the scale of the universe have been received with profound respect, and also Prof. Michelson's new method of measuring the diameter of a star, which supersedes human vision. This instrument, called the "interferometer," was invented by Prof. Michelson and is attached to the 100-inch reflector of the Mount Wilson Observatory. With this device "Betelgeuse" in the Constellation of Orion was found to be 300,000 miles in diameter against our own 8,000 puny miles. Prof. Garrett P. Serviss, in this issue of The Mentor, gives us the latest word in astronomy on these two subjects. With their amazing

"Seeing the City" in New York is expensive, but you can see the Sun for five cents

LARGER NETWORK NEBULA
Photograph made at Mount Wilson Observatory, July, 1910

discoveries the story of Astronomy is told to the present date. In the past ten years the use of photography in astronomical research has brought out startling new facts. Undoubtedly the future holds even greater wonders in store for us.

THE PLEIADES

The Seven Sisters of the Sky. From the painting by Elihu Vedder, in the Metropolitan Museum of Art. New York

A COMET THAT COMES BACK

OF ALL the comets that blaze in the sky, there is only one that pays the earth regular visits. This is Halley's Comet, which swings around its orbit with the unfailing system of a railroad train. Previous to 1910 it was visible in 1835, and before that in 1758 and 1682. It has the most interesting history of any of these vagrants from outer space. In contrast to the dependable movement of the planets, comets, with the exception of Halley's, follow an erratic schedule. Most of them are so faint and far away that they can only be seen through powerful telescopes, and few ever have been seen more than once.

Edmund Halley, an English astronomer, who lived two centuries ago, was the first to map the path of the comet, and determine that it had been coming in view regularly every 75 or 76 years, as far back as astronomical records were kept. During his studies to discover whether any of the known comets appeared to have the same orbit, he found that the track of the notable comets of 1531, 1607, and 1682 were similar. Finally he convinced himself that they were one and the same comet.

Halley staked his reputation on the theory that this comet would again appear three quarters of a century after 1682—the year when he made his observations. "If it should return," he wrote rather plaintively, "impartial posterity will not refuse to acknowledge that this was first discovered by an Englishman."

Halley died in 1742 and was buried not far from Greenwich. Astronomers did not forget his prophecy. As the date drew near when it should be fulfilled, men of learning searched the sky. A French scientist computed that the influence of certain planets would retard the comet for twenty months. A farmer student living near Dresden was the first to see it, on the night of Christmas, 1758.

Courtesy "Popular Astronomy"

Halley's Comet (1910), Venus, and the Crescent Moon

A remarkable photograph showing their reflection in the water

When there was no longer any doubt as to the truth of Halley's prediction, astronomers were able to formulate a table showing that for fourteen centuries it had been recorded as far north as Iceland, as far to the east as China. They identified Halley's Comet with the one that had attracted the attention of all Europe in 1066, the year of the Norman Conquest.

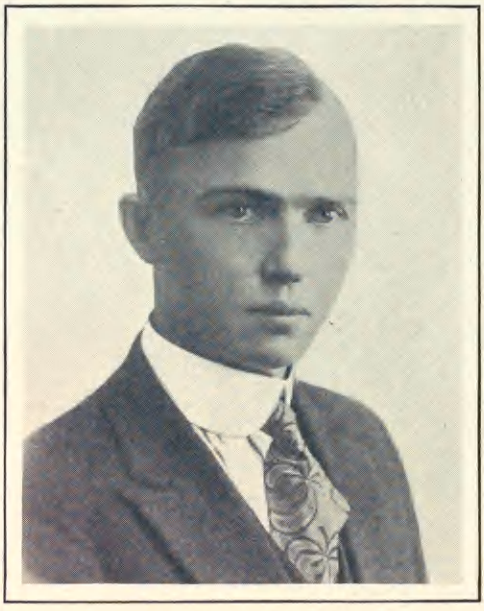
Comets have often been objects of superstition and alarm. In 451, a "fearful star with a tail" was thought to have influenced the defeat of Attila the Hun. This comet was doubtless the "sword-shaped sign" that hung over Jerusalem before a disastrous war. In Europe, medals were sometimes issued previous to its appearance and worn as talismans against war, pestilence, and famine.

HE MEASURES THE MILKY WAY

SWARMS of giant suns in stupendous globular clusters, swarms of pigmy ants in rotting mountain-side logs—what have they in common?

The speed and temperature of far-flung stars, the speed and temperature of earth-bound insects—what relation is there between them?

Whatever the answers to these questions, Dr. Harlow Shapley, who is measuring the extent of the Milky Way, and revealing to man what an insignificant place his earth and its animal life holds in the material universe, also delves into the problems of life on this same trivial earth, and into the problem of the mechanism of living. In a recently published biological paper he announces the discovery of hundreds of "missing links" in the evolution of ants, describing worker ants that have minute vestiges of wings on their backs, an indication that millions of years ago all ants were winged and are descended from wasp-like ancestors. More remarkable are his observations that the speed of ants depends so closely on temperature that for some species the time of running through a "speed trap," as shown by a stop-watch, gives the temperature of the surrounding air within one degree! The speed at 100° is twelve times as great as at 50°! Other observations on the ants of the California mountains deal with the astonishing and barbaric custom of slave raids and of enforced slavery in the ant world.



Dr. Harlow Shapley

Dr. Shapley, whose astronomical work is given credit for marking a new epoch in our conception of the immensity of the stellar universe, is a young man as the age of scientific investigators is reckoned. He was born at Nashville, Mo., in 1885.

After attending various preparatory schools, he commenced, while a student at the University of Missouri, which he entered in 1907, the studies that later resulted in the new conclusions as to the size of the perceptible universe. He was from the first interested in the study of the "Cepheid variables," those brilliant stars that are thought to be tremendous globes of pulsating gases, a hundred times brighter than the sun. The three years following 1911 were spent at Princeton, where he studied and worked with Professor H. N. Russell, receiving the degree of Doctor of Philosophy. In 1914 he joined the staff of the famous Mt. Wilson Observatory in California, going on a leave of absence in March of this year to the Astronomical Observatory of Harvard University.

It was at Princeton that Dr. Shapley and Professor Russell developed methods of determining the distances of variable stars.

At Mount Wilson Dr. Shapley perfected his method of measuring star distances photometrically. He then applied the method to the problem of the distances and structure of the great star-clusters, with the result that the stellar universe, as known to scientists, is at least a *thousand times larger* than it was before the distances to the clusters were measured.

The earth is but an infinitesimal unit in this universe and the sun holds no such important position as has heretofore been accorded it. Dr. Shapley found that a local cloud or cluster of stars surrounding the sun had contrived to deceive astronomers as to the sun's position. This local cloud, when measured, was found to be at least 60,000 light-years (a light-year is six trillion miles) from the center of the Milky Way. The cloud of surrounding local stars helped to make the sun appear to man to be at the center of things universal, a belief that Dr. Shapley's studies have now dissipated.

DOES THE MOON INFLUENCE OUR WEATHER?

YEARS ago, when an almanac could be found in every farmhouse, it was customary to associate weather changes with changes in the phase of the moon. Those almanacs, usually printed long before the beginning of the year to which they referred, contained general weather forecasts. As the forecasts were not specific and were not limited to a designated region it is reasonable to suppose that they were often verified, for one can find almost any kind of weather in some part of the United States every day of the year. Changes in moon phase appeared to be the principle upon which these long-range weather forecasts were based, in so far as they had a base.

The Full Moon

When human intelligence was at a low ebb, great numbers of people were guided in important matters by the changing phases of the moon. Some farmers planted and harvested "according to the moon."

Fortune tellers, clairvoyants, and others of that ilk who prey upon the unsophisticated still keep alive these so-called mysteries. Occasionally one hears of some backwoods farmer who still sows and reaps "according to the moon."

As a result of modern scientific research people have learned a great deal about the moon and other heavenly bodies during the past few years. Here are some of the facts which have been revealed by the researches of astronomers at Lick Observatory and other institutions:

The moon is a comparatively small and dead astronomical body which revolves around the earth in about twenty-nine days. It is our nearest neighbor in space. It was once part of the earth. Some time during the process of cooling the earth cast off this smaller mass, and it continues to revolve around it as a satellite. Some planets have several satellites. The earth has but one.

The moon continued to cool after becoming detached from the earth. If it ever had any water it has long since been lost, for to-day the moon is dry and dead. There can be no life on the moon at the present time. It no longer has light or heat of its own. The side exposed toward the sun must get extremely hot as a result of solar radiation, and must get proportionately cold when it is again turned away from the sun. Moonshine is simply reflected sunshine. The small amount of reflected heat received by the earth from the moon is too slight to be appreciable.

In addition to the illuminating effect of moonlight, the moon exerts certain influences upon the earth. Its gravitational pull upon the earth results in the tides of the ocean. Moreover, the same pull causes earth tides. These are not appreciable to our senses, on account of the rigidity of the earth, but they can be detected with the aid of delicate scientific instruments. The same gravitational attraction causes tides of the atmosphere. These, too, are inappreciable to our senses, but their presence is shown graphically by the recording barometer almost every day by two distinct waves made by the pen in contact with the revolving drum. This instrument records the pressure or weight of the atmosphere, an important consideration in scientific weather forecasting.

Occasionally one hears it said that the moon drives away the clouds. That is a delusion. Clouds of the cumulus type naturally dissipate and vanish in the evening when the earth cools and air currents ascend. Moreover, clearing at night is rendered conspicuous when the moon is up. Weather proverbs based upon the appearance of the moon or its changing phases are unworthy of our respect, for the moon does not influence our weather to any appreciable extent.

—*A. H. Palmer, Meteorologist, U. S. Weather Bureau.*

MODERN ART AND "ISMS"

SOME years have elapsed since the "Nude Descending Staircase" was sprung upon a startled public at an exhibition of Cubist and Futurist paintings. One critic dubbed it "Explosion in a Shingle Mill." A storm of anger and ridicule greeted it and other pictures of its kind. What the painters of these apparently formless figures, splotches of color, whorls, and spirals were driving at was and is incomprehensible to the average person. Yet they have not been laughed off the stage, have grown in numbers, and are exerting great influence over young painters throughout the world.

Like all movements, these modern art movements have suffered at the hands of extremists, notoriety seekers, and incompetents, but in the main are sincere efforts to produce truer and finer painting than was done by the majority of artists in the nineteenth and early part of the twentieth centuries. They cannot be dismissed as the work of men that were unable to measure up to the standards of academic art, for some of their exponents were originally academic artists of rank. Matisse, for instance, whose painting irritates academic critics above all others, was once held to be one of the finest draftsmen in France by these same critics.

Post-Impressionist

Paul Cézanne, leader of the Post-Impressionists, as he painted himself in the manner of his school

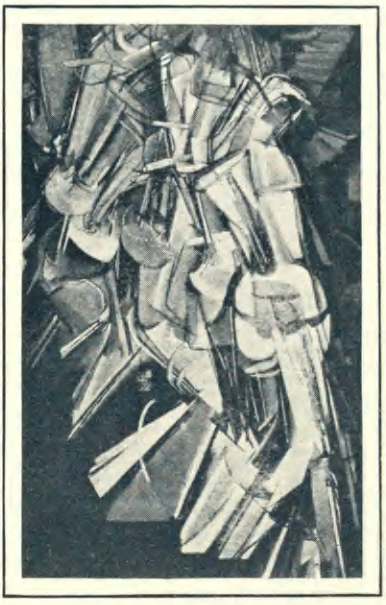
It doesn't do to laugh at them or label them the work of crazy men and proceed to forget them. Paris did these things when the Impressionists first exhibited and the work of Impressionists now hangs in the French national galleries. Edouard Manet, the Impressionist leader, couldn't sell his picture, "Dinner in the Studio," then. When it was exhibited in New York, not so long ago, the price was $7,000 and later it was sold for $60,000 to the Munich Art Museum. Another Impressionist painting, by Renoir, which brought $22 at the time it was painted, has since been sold for $14,000. So intense in their work and eccentric in their habits were some of the Post-Impressionists that they were all thought to be crazy. One of them, Van Gogh, died in an asylum after cutting off his ear and sending it to his friend, Gauguin, as a sign of contrition following a quarrel. His painting was not the result of his malady, however; insanity followed a sunstroke suffered while painting in the hot sun of Provence. Van Gogh and Gauguin paintings to-day command high prices.

That Mentor readers may be able to judge intelligently the work of the new schools, the Editor asked Professor John C. Van Dyke, one of the best known American writers on art, to explain the new schools. It follows:

"Attempts to follow the recent movements in painting lead nowhere, because the movers themselves do not quite know where they are moving. There is Babel and discord, with no well-defined objective. In a general way it may be said that almost all the movements are toward a newer and greater realism through exaggeration or suggestion. They are developments of older movements. In Greek sculpture the chin and jaw are round, decorative, characterless; in Botticelli the chin tends to a triangle from the cheekbones down, and the result is to give a pathetic or emotional character; in Courbet, Millet, increasingly so in Cézanne, Gauguin, and Van Gogh, the jaw is heavy, tending to squareness, and reveals strong masculine character; in Picasso it becomes square, cubistic, so positively exaggerated that it shows not character but caricature.

"Recent painting seems bent upon attaining strength at the expense of every other quality. Strength in drawing is gained, not by the smooth or round line but by the broken and the angle line. Academic art having used the graceful and the flowing to produce roundness seems one reason for Cubism using

the harsh and the angular to produce squareness. The points of angles are more obtrusive than the rounded contours. An elbow forces itself upon the attention more positively than a shoulder. Therefore the elbow is put in with angle lines, and (to emphasize movement) repeated several times from different points of vision. The whole figure is perhaps repeated in various aspects on the one canvas. By duplication of a figure, an elbow, a hand, many times it is thought to give the impression of a figure or hand in movement. "A running horse has twenty legs instead of four." That is Cubism and in measure explains the much discussed "Nude Descending Staircase," or any of the cubist work of Picasso, Picabia, and others of this new school.



The Famous "Nude"

An example of Cubist painting by Marcel Duchamp, "Nude Descending Staircase," that stirred the art world when first exhibited

"Futurism has its affinities with Cubism. It derives from Cézanne and exaggerates features known to academic art. For example, it has long been known that the horizontal line produces a feeling of repose, the perpendicular line a feeling of dignity, the broken line a feeling of action. Futurism tries to suggest movement along a road by zigzags, by portions of trees, fences, horses, people—all the things one would see in motoring along a road; it exaggerates height in a figure by repeating the long vertical lines of the arms, legs, and neck; it portrays repose by exaggerated horizontal lines of figures, lowlands, waters, clouds. Besides this, Futurism argues that the observer should be, not out of the scene, but *in* it, a participator, with action going on all around him instead of just in front of him. That leads to suggestions of things seen at the sides or back and naturally confuses the things really seen in the front. In this respect Futurism attempts a larger realism which it cannot completely realize. The movement is said to have originated with Boccioni, Cara, and Russolo, but its followers to-day may be counted by the score.

"Synchronism exaggerates in color as Cubism and Futurism exaggerate in line and form. Delacroix knew about complementary colors and also knew and applied in painting the theory that certain colors symbolize certain feelings or emotions. The grays were productive of sadness, the reds of gladness, the yellows of warmth, the blues of coldness. Synchronism has developed this knowledge and has also put forth, with additions, the Impressionist theories of color—vibration, juxtaposition, and relation. It uses color, not in points, but in related blocks. The bright-colored blocks stand for light; the dark-colored blocks for shadow. Color is fundamental and dominant with Synchronism—as much so as in color-music. It seeks by the suggestiveness of related colors to symbolize states of emotion or feeling."—*John C. Van Dyke.*

The Futurist Method

"Bal Tabarin" by Severini, in which the painter seeks to give the observer the composite effect of a ballroom upon a man in the picture, not in front of it

THE BANK OF ENGLAND WAKES UP

THE venerable Bank of England is to be remodeled, brought up to date. This causes as great a stir in London as if the lions of Trafalgar Square were to be given a coat of gilt paint, or the white paper money issued by the National Bank tinted green.

The "Old Lady of Threadneedle Street" is to have a new dress. She is the richest old lady in the world, and can easily afford it. Her vaults contain millions of dollars in gold and silver bullion, and every day she prints and issues fifty thousand promissory notes, with a value of $25 to $5,000 each. The porters at her doors wear crimson and gold lace; her messengers are arrayed in salmon-colored, long-tailed coats, black trousers and high hats. They brighten the dim old streets of the city as they go about on their errands.

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The Bank of England
Frequently called "The Old Lady of Threadneedle Street"

The bank, a private stock company, was founded in 1694. The buildings it occupies at present were designed by a famous architect, Sir John Soane. The low irregular pile covers three acres of land in the busiest quarter of London. It is the most celebrated and powerful banking institution in the world, and one of the oldest. Its history is the financial history of the British Empire, and its musty records are animated with tales of romance, stress, and adventure.

William III needed money to fight Louis XIV of France. Before he came to the throne, the pockets of the people had been the treasury of English kings. Instead of robbing his subjects or borrowing from foreign nations, King William proposed that the Bank of England should raise a loan of $6,000,000. The Government has never been out of the bank's debt from that day to this. The institution is managed by a directorate of London financiers. The constitution under which it was organized excluded Scotchmen, Quakers, and Jews from the board. A governor and deputy governor are appointed for a term of two years.

The bank receives, keeps, and pays out all public revenues. It manages the public debt; it advances money to the Government and to private banks. Any person can send gold to the vaults and have it kept there without charge.

All the printing for the bank is done within the walls—walls that are windowless. The antiquated halls and banking rooms are lighted by nine inner courts. The corporation has the exclusive right to print and issue British bank notes. Each note is issued only once. It is canceled on its return to the bank. Some notes circulate only a single day. Full particulars are recorded of the person or firm that sends in each note. The paper money is then numbered, arranged numerically, filed for reference in case of fraud or dispute, and kept five years before it is burned. The "Strong Box of the Empire" has many times been cheated by swindlers. Bank note forgeries became so alarming at one period, a hundred years ago, that issuers of forged notes used to be hanged regularly on Monday mornings.

In 1780, the bank was threatened by a mob of marauders. The "Gordon Riots" are described by Dickens in "Barnaby Rudge." The attack failed, but ever since that day a detachment from the Tower of London has stood guard at the bank. It is the custom, and has been for 140 years, to serve a hearty dinner of roast meats and other favorite English dishes to the officer of the day and two friends. Needless to say, the "Beef-eaters" of the Tower will oppose the passing of this ancient custom, when new buildings supplant the old.—*Richard Dean.*

HE WAS WISE FOR OTHERS

ONE hundred years ago, Charles Caleb Colton, parson, wine merchant, extortionist, and author, published one of the most unique books in English—"Lacon." Notorious as was its author, his name is now known only in connection with the book which is as pungent, biting, and applicable to conditions to-day as it was when it appeared on the London bookstands.

"Lacon" is, as he described it, "Many Things in Few Words for Those Who Think," a collection of aphorisms and penetrating observations on human character.

Colton was curate of Tiverton, a graduate of Cambridge, and a scholar of note. He was much talked about because of his sporting habits. He spent more time hunting and fishing than on his religious duties. Then, too, he caused a stir with a pamphlet on the Stampford ghost, a neighborhood hoax which completely fooled him. One Sunday, after having come from a deathbed, he confessed his shortcomings in a moving sermon and promised to change his ways, but, several Sundays later, gabbled through a short service and hurried off to his favorite hunting ground. His gig, dog, and gun had been waiting outside. At Kew, where he was sent as vicar, he kept his cigars under the pulpit, saying the temperature was just right there, hunted and fished with as much gusto as ever, and shocked the King of Hanover by preaching in gray trousers. "The value of a religious truth does not depend upon the color of a man's trousers," was Colton's reply when he was told that the king had expressed his disapproval.

Kew and its country ways bored Colton, so he moved, guns, horses, dogs, and books, to London. On Sundays he drove out to his church to preach, but on week days he was an author, wine merchant, shoe merchant, and other sorts of business man. He lived in a cellar under a Methodist chapel. Here he wrote "Lacon" on the backs of envelopes, old letters, and scraps of paper at such times as he was not busy with his various enterprises. A friend found him scribbling away in an old green dressing gown, a broken wine glass for an inkwell, a deal table for a desk. An excellent bottle of wine, from a sawdust bin under the bed, reconciled the visitor, however.

In 1824, Colton disappeared. He was hopelessly in debt. He reappeared at Gottenburg, Sweden, and then at Newport, Rhode Island, where he went under an assumed name. He remained in America two years, part of the time in New York, where he wrote for newspapers, and part in Charleston, S.C., where he was lauded by the "Southern Literary Journal."

Back in Europe, Colton made a futile effort to regain his vicarage and then settled in Paris. He became a correspondent, horse dealer, and picture broker. He wrote a treatise showing that gambling ends in ruin, then staked his last money on the wheel. He won, doubled, doubled again, and continued until he broke the bank. He ran his winnings up to $125,000, kept them in an iron box in the floor of his Palais Royal apartment, and carried a pistol. He was as shabby as ever but always appeared covered with expensive jewelry. In the end, what with the picture business and the gaming table, he lost all.

An old malady was approaching a crisis that made an operation inevitable. Colton moved to Fontainebleau, made his will, discussed his chances for recovery with a friend, and, the same night, shot himself through the head, April 28, 1832.

Colton Laconics

HERE are some of the aphorisms of Caleb Colton, the man that was wise for others. Some of them, written in connection with current events of his day, are astonishingly applicable to current events of to-day—a century later:

Of the professions, it may be said, that soldiers are becoming too popular, parsons too lazy, physicians too mercenary, and lawyers too powerful.

There are no two things so much talked of, and so seldom seen, as virtue and funds.

Questionnaires are formidable, even to the best prepared, for the greatest fool may ask more than the wisest man can answer.

The mob is a monster—strong to execute, but blind to perceive.

Great men, like great cities, have many crooked arts and dark alleys in their hearts, whereby he that knows them may save himself much time and trouble.

There are some men whose enemies are to be pitied much, and their friends more.

Law and equity are two things which God hath joined but which man hath put asunder.

FIRST AMERICAN LAW SCHOOL

IF TO-DAY you should visit that rare New England village, Litchfield, Connecticut, you would find near the corner of East and South streets an austerely simple little frame building, with a tablet upon its western face. Within, a gift-shop displays its wares; but the tablet says: *Judge Reeve's Law School Building—1784.* These words are curiously uninforming; and you might turn away without thought of this diminutive, Quakerish building once housing the *first law school in the United States.*

The Humble Cradle of American Law

Only a few months after the peace of Paris had ended the Revolutionary War, and four years before the Constitution was adopted, students with portfolios and inkhorns were passing along the shady Litchfield ways toward this modest lecture hall. It then stood on South Street, close by the dwelling of the learned lecturer, Tapping Reeve. Reeve, at that time forty years of age, was a Princeton graduate who, having been admitted to the bar in Hartford, had begun practice in Litchfield—in those days a town of decided importance in Connecticut affairs.

Reeve had married the only sister of Aaron Burr, and, before the outbreak of the Revolution, Burr lived and studied in Reeve's Litchfield home.

Like many another attorney, Reeve received into his office young aspirants to legal fame. His tutelage must have been valued, for his students finally became so numerous that, to accommodate them, he had to put up the little building that, in its restored form, is pictured here. In this modest structure, Reeve's law school, in 1784, entered upon the half-century of its remarkable career. In 1798, James Gould, who had just been graduated from the school, became associated with Reeve in the joint work of instruction, and Gould's office building, long since destroyed, was used for part of the classes. Age compelled Reeve's retirement in 1820, but Gould, with the aid of various instructors, continued the school until 1833.

At times more than sixty students were in attendance, and every State of the Union was represented. The course was for fourteen months, with vacations of two weeks each; and the fee was $160. Every Saturday was examination day, and mootcourtswere frequently held. There were no text-books then. Law of all kinds in this country was in a chaotic and undeveloped condition. When Reeve began his work, not a volume of reports of decisions in any United States court existed. The Constitution had yet to be interpreted, and complicated adjustments between Federal and State governments had yet to be made. A full tribute has never been paid to the services of the Litchfield Law School.

Among the graduates of this school—which, strange to say, was never incorporated—were 50 representatives in Congress, 15 United States senators, 10 governors of States, 7 foreign ministers, 5 secretaries in the Cabinet, 44 judges of Federal and State courts, and 2 justices of the United States Supreme Court. In the list of distinguished alumni, probably the best known was John C. Calhoun, class of 1805, who planted elms that are still standing on West Street. The catalogue also shows the names of Levi Woodbury, John Y. Mason, and John M. Clayton. Horace Mann took the course here; so did John Pierpont, the poet, and George Catlin, the ethnologist and painter.

The school's successor, the School of Law of Yale University, was not opened until 1843, ten years after Tapping Reeve's pioneer institution had closed its doors forever.

George S. Bryan.

Effective Work Demands Modern Equipment

Success is for those who take advantage of every opportunity. Notice how frequently the man of affairs uses

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? ? ? WHO: WHAT: WHEN: WHY ? ? ?

***On this page we print such questions and answers selected from our daily mail as seem to have a general interest.*

Question. Where and when was Joan of Arc put to death?

Answer. She was burnt at the stake at Rouen, France, May 31, 1431, after a cruel, unjust, torturing trial. You will find the full story of Joan of Arc, written by Ida M. Tarbell, in Mentor No. 98.

Question. What is Magna Charta and who signed it?

Answer. It is the great charter of liberties of England, granted and signed by King John in a conference between him and his barons at Runnymede, June 15, 1215. It has many protective articles, securing the people against abuses of the king's power. Its most important article provided that no freeman could be taken, imprisoned, or proceeded against except by the judgment of his peers or in accordance with the law of the land.

Question. What are Ruskin's "Seven Lamps of Architecture"?

Answer. Ruskin's great work, published in 1849, was written in order to arouse a new and finer conception of the meaning and beauty of Architecture. The author considers Architecture from seven different points of view, each one of which is named a lamp. The seven lamps are as follows: The Lamp of Sacrifice, The Lamp of Truth, The Lamp of Power, The Lamp of Beauty, The Lamp of Life, The Lamp of Memory, The Lamp of Obedience.

Question. What is "The Lion of Lucerne"?

Answer. The figure of a lion hewn out of the living rock on the side of a cliff overlooking a little lake in the public park of Lucerne, Switzerland. "The Lion of Lucerne" was designed by the great Danish sculptor, Thorwaldsen, and it is a monument to the memory of the brave Swiss Guards who fell in defense of Marie Antoinette in the Tuileries at Paris, on the terrible 10th of August, 1792, when the crazed mob broke through the gates and ran riot over the palace. Seven hundred of the Swiss Guards were brutally massacred, and King Louis XVI, Marie Antoinette, and the royal family were taken prisoners. So "The Lion of Lucerne" was not only a memorial to the Swiss Guards, but also to the day upon which the Bourbon kings in France ceased to reign.

Question. What is the meaning and origin of "*E Pluribus Unum*" on our coins?

Answer. *E Pluribus Unum* means "One from many," and it was suggested as a national motto by John Adams in 1782. While Adams was Minister to England, Sir John Prestwick, an eminent English antiquary, suggested to him the Latin phrase as a good motto to indicate the union of the colonies. John Adams passed the idea on to the Secretary of Congress, Charles Thompson, who commended it to Congress as a design for a government seal—the motto to be borne on a ribbon held in the beak of an eagle.

Question. What is the Sorbonne?

Answer. In the 13th century, Robert de Sorbon, chaplain of St. Louis (Louis IX of France), founded an educational institution in Paris for the benefit of poor young men of France, ambitious to study science and theology. Many of the most gifted French scholars graduated from The Sorbonne, among them the great Cardinal Richelieu. Lectures are still given gratuitously at this famous university. Madame Curie and other celebrated scholars are on the staff of professors.

Question. Was Longfellow's Evangeline a real character?

Answer. The story of Evangeline is based on fact, but there was no character of this name mentioned in Acadian history. Longfellow first intended to name his heroine "Gabrielle" or "Celestine," but chose "Evangeline" for the sake of the meter. There was a true story, told to the poet by Nathaniel Hawthorne, of "a young couple in Acadia," who on their wedding day were parted by British soldiers, never to see each other again, until, after years of searching, the wife found her husband on his deathbed. Longfellow made use of this story in his poem.

Question. What is meant by the term, "Barbizon Painters"?

Answer. Barbizon is a small village near the Forest of Fontainebleau. It became noted as one of the favorite haunts of French painters, many of whom became very famous. The Barbizon School or Fontainebleau School, as it is also called, has among its original members such painters as Rousseau, Millet, Corot, Dupré, Daubigny, Diaz, Troyon, and others equally celebrated in later years. The Barbizon School took form about 1849, when Rousseau went down from Paris to the little village. Several years after, Barbizon and the Forest of Fontainebleau were the scenes of the work and humble life of a great many master painters, the best known to us in America, probably, being Millet, the painter of "The Angelus," "The Sower," and "The Gleaners."

Question. Where and when did Aaron Burr die, and where is he buried?

Answer. Aaron Burr died at Port Richmond, Staten Island, on September 14, 1836, and he is buried in the old Princeton cemetery close by the graves of his father, Aaron Burr, Sr., and his grandfather, Jonathan Edwards, both of whom had been Presidents of Princeton College. It has been said that the marble monument to Aaron Burr in this cemetery does not mark his grave, but is simply a memorial. We have, however, the authority of James Parton, and other historians, that the remains of Aaron Burr lie "according to his own request in the cemetery at Princeton, near those of his honored father and grandfather."

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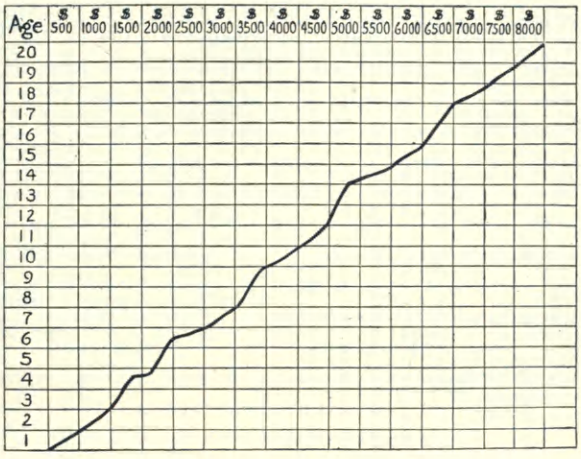

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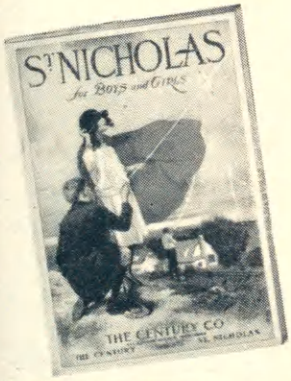

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THE OPEN LETTER

MR. SERVISS'S article is full of significance for us little humans who think we know what "greatness" is. In the light of what he tells us, our solar system, which we have always considered so vast, is apparently a mere, insignificant "side show" in the universe. The full meaning of his facts and figures cannot be grasped at once—some of them cannot be truly grasped at all by the average mind. What concerns us most directly, of course, is the effect of all these amazing discoveries on the accepted theories of the origin and evolution of our sun and the family of planets to which we belong! I put that question to Mr. Serviss, and got the following answer:

Garrett P. Serviss

"It is true that these discoveries minimize by contrast this poor little old earth of ours and the farthing-candle star that lights it, called the 'Sun.' But the discoveries also throw new light upon the evolution of our sun and its planets, whose probable age they magnify as much as they diminish the relative size. Thus, as pointed out by Dr. Shapley:

"Some of the great globular star-clusters are more than 200,000 light-years away. It is plain from this that the light of the most distant clusters must be 180,000 years longer on its journey to us than is the light from the nearer clusters. Therefore, we do not see them as they are simultaneously, but as they are at an interval of 180,000 years apart. Now, if we assume, as there is reason to do, that these clusters are of about the same actual age, then the nearest one, *as we see it*, must have been in existence 180,000 years longer than the most distant one, and must consequently be advanced by that amount of time in its evolution. Any considerable changes that have taken place during that interval should be evident to the spectroscope, which analyzes the light of the stars.

"Here comes the remarkable thing: When the light of two star-clusters separated by that long interval of time is analyzed *no evidence of evolutional change appears.* This proves, not that *no* evolution is occurring, for there is plenty of evidence that all the stars are subject to regular evolutionary processes, but that the evolution is *enormously slower* than has hitherto been believed. According to the celebrated Helmholtz hypothesis, the sun's energy of radiation is maintained by the contraction of its volume and many calculations based on this hypothesis have shown that the sun cannot have been in existence, as a sun, for more than twenty or thirty million years, and that in five or ten million years more it will be extinguished. The geologists have loudly asserted that this was far too little time for the development of the progressive life forms that have dwelt on the earth, but the astronomers have replied, in effect: 'We can't help that; look at our figures.'

"But now, in view of the evidence concerning the very slow development of stars in the globular clusters, the astronomers are in a position to revise their calculations, and look for some other explanation of the origin of the light and heat of the sun and other stars. Among such possible explanations the phenomenon of radio-activity has been suggested, but it is insufficient. Another and better explanation involves the slow annihilation of matter, deep within the excessively heated stars, and its transformation into radiant energy. Anyhow, in the light of the new discoveries, we appear to be in the midst of a revolution in our theories of the origin and development of the universe."

W. D. Moffat

EDITOR

SPECIAL EDITORIAL NOTE. In our August "Ocean" number, a statement is made in the legend of the frontispiece that the annual income received by the Prince of Monaco from Monte Carlo is $100,000,000. In typesetting the paragraph an extra cipher crept into this sum. The amount should have been stated as $10,000,000 for the past year—about $4,000,000 as income to the Prince, and the rest as contributions by the Monte Carlo concessionaires toward the upkeep of the Principality of Monaco.

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The New York Stock Exchange from the porch of the United States Sub-Treasury, the heart of the financial district of New York City, now the center of the world's financial system. On the corner at the left, just out of the picture, are the offices of the House of Morgan

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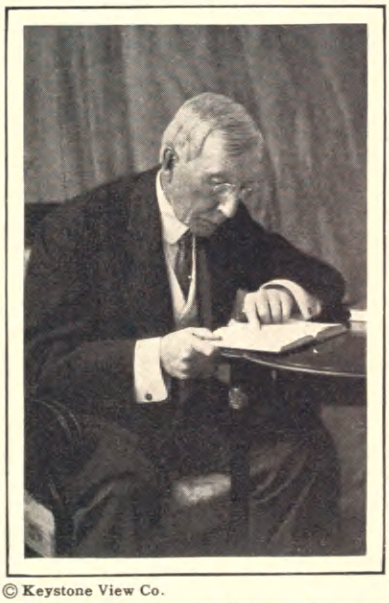
GREAT FORTUNES OF HISTORY

By ROGER W. BABSON

Financial Authority and Statistician

IN MOST of the dramatic versions of "The Count of Monte Cristo" there is a scene in which Edmond Dantes, wrapped in the burial shroud of the Abbé Faria, and tossed to the waters of the Mediterranean from the ramparts of the Chateau d'If, reappears dripping on a bit of island closely adjacent and, with hand raised to high Heaven, cries: "I have the treasures of Monte Cristo! The world is mine!" In the year 1828, which was the one in which Dantes made his escape from his stony and darkened dungeon and assumed various disguises for the purpose of confounding his enemies and richly rewarding his friends, the world was far from being the expensive purchase that it has become since. But even so, Monte Cristo, to sum up the case bluntly, and in American slang, was only a sort of "piker" millionaire.



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Founded Greatest Modern Fortune

John D. Rockefeller, whose family holds the greatest private fortune. The late Czar of Russia was reputed to have been the only man richer than Rockefeller

For almost eighty years Dumas' romantic creation has held the imagination as the supreme figure of limitless wealth and riotous expenditure. When making Dantes his heir in the dungeon of Chateau d'If, the Abbé Faria recounted, with exactness, the hidden treasures of the Cardinal Spada, lying in the caves of Monte Cristo; gold bullion and coin and jewels to the value of two million Roman crowns. Later, as

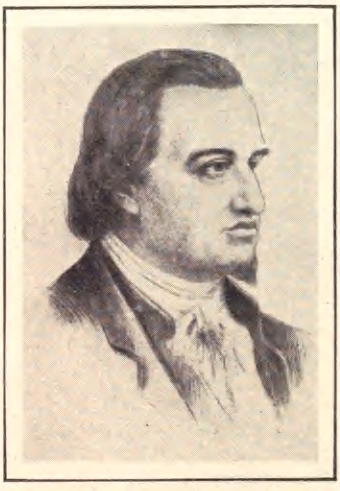
Dantes found it, there were one thousand bricks of gold, each weighing from two to three pounds, twenty-five thousand crowns, which equals half a million of our money, and ten double-handfuls of jewels, of which a single diamond that he gave away was worth fifty thousand francs. Approximately, the Count of Monte Cristo was worth forty million American dollars — which, today, with judicious economy, would enable him, after paying his income tax, to live in reasonable comfort and luxury. But he would not be the conspicuous prince of wealth that he was in his day. His expenditures made an impression in the fifth decade of the last century. He paid twenty thousand francs apiece for his horses (they were paying almost as much as that for Ford cars in France last year); one pair of horses he bought in the morning for thirty-two thousand francs and that evening sent them back to their former mistress with their head rosettes adorned with diamonds; with a superb air he crushed the upstart banker Danglars by the information that he would need six million francs in order to meet the running expenses of a year. The world was very young when we took these items seriously as magnificent extravagances. To-day, beneath the cold eye of scrutiny, the count would simply be placed among many other well-to-do gentlemen.

From an antique bust in the Hermitage, Petrograd

An Ancient Magnate

Lucullus, the Roman rich man, whose name is the symbol of luxury because of the lavish feasts for which he was famous

In every period of human history we find one or several supremely rich men who overtop the world they live in like the famed Colossus of Rhodes. The first of all these colossal millionaires was Crœsus, King of Lydia in the sixth century B. C. He inherited wealth from a long line of ancestors, each of whom was financier, monopolist, and king. He had no legal staff to pay. To indicate what money would do then it is enough to recall that in the time of Crœsus a fat ox could be bought for $1; a sheep for 20 cents; a bushel of wheat for 12 cents; and that a day's wage was from 12 to 20 cents. The extent of Crœsus' wealth may be estimated by his gifts to foreign temples. His gift to the temple and people of Delphi, according to Herodotus, who copied from the records, was a pyramid of 117 bricks surmounted by a lion; the bricks each 18 inches long by 9 inches wide and 3 inches thick; the four top bricks of pure gold and weighing over 400 pounds apiece. The other 113 bricks had a



"The" Rothschild

Mayer Bauer, Frankfort money lender, who took charge of his ruler's funds when the French invaded the city, kept them safely and later returned them with five per cent. interest. He founded the famous European banking house that bears his name—derived from the red shield (*roth schild*) that hung over his office

Courtesy J. Clarence Davies

Eden Farm, Manhattan Island, owned by the founder of the Astor fortune. From an 1826 sketch

certain alloy of silver, the ratio being three parts silver to seven parts gold. The lion was of pure gold and weighed about 800 pounds. The value of the pyramid in gold and silver alone was $3,500,000; and, adding 15% for the work of the artists, amounted to over $4,000,000. Roughly, the purchasing power of money in the sixth century B. C. was twenty times what it is in the year 1921. Therefore, the modern equivalent of the gift would be $80,000,000. In addition to bricks and lion, there were two enormous bowls, each containing 5,400 gallons; one of solid gold, and the other of silver; and the golden image of a woman. Also Crœsus sent many vases of gold and silver, the necklace and girdles of his wife, and 360 adorned bowls, each of solid gold and weighing one pound, and a present of $13 to every man in Delphi. The ceremony of gift was accompanied by the sacrifice of 3,000 head of each of the different animals used in worship. Summed up, the $10,000,000 which Crœsus devoted to expressing his esteem for the city of Delphi did a work that would call for $200,000,000 to-day.

Crœsus must also have been good to his family connections. When the Persian king Xerxes led his great army to Greece he passed through Lydia. There he was entertained by Pythius, a distant relative of Crœsus. At the end of a superb banquet Pythius vouchsafed the information that he had on hand, in gold and silver, $24,000,000 that he wished to give to Xerxes as a token of his esteem. Xerxes, apparently mellowed by the entertainment, hesitated before accepting the gift. He feared that Pythius would be reduced to want. But Pythius said: "My lands, estates, slaves, and income-bearing properties are still untouched. This sum is simply cash on hand that has not yet been invested." The equivalent of half a billion not yet drawing interest! That is something to stir the imagination of even

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A Part of Eden Farm as It Looks To-day

Times Square, New York City. The site of the Hotel Astor on it cost $190 a square foot

financiers of the World War period!

King Solomon was wealthy as well as wise. Solomon's yearly income was six hundred and sixty-six talents, which gave him in all a sum amounting to about twenty million dollars in our terminology, and what held with the relative purchasing power in the time of Crœsus holds also in the case of Solomon. Then the enduring fame of the Queen of Sheba is largely based on the fact that her extravagances were more glaring than those of Solomon.

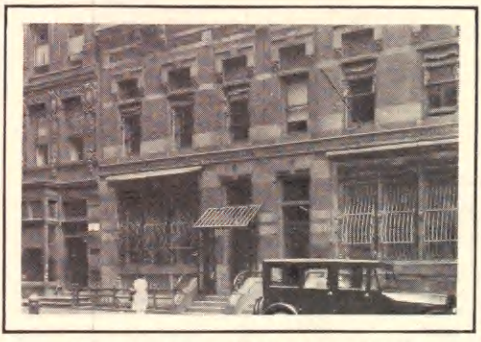
With all his magnificent extravagance, King Solomon probably possessed a vein of caution. It was with the Queen of Sheba that he put his most splendid foot forward. Yet the exact amount of his gifts is more or less indefinite, Holy Writ merely saying that he "gave her of his royal bounty." On the other hand, before Solomon had been moved to generosity it is recorded that the Queen "gave the king an hundred and twenty talents in gold, and of spices great store, and precious stones." The inference is that the episode of the visit of the Queen of Sheba proved to the exchequer of Solomon an asset rather than a great expense.

From a painting by Chappell

An Aladdin of America

John Jacob Astor, founder of the Astor fortune. Whatever he undertook yielded him a golden harvest

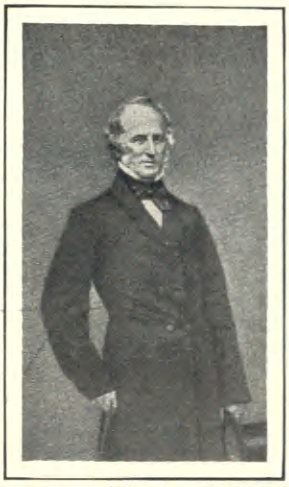
Again it is wise to turn to fiction for a picture of wealth at the beginning of the Christian era. General Lew Wallace's "Ben Hur" has no more striking figure than the aged and crippled steward Simonides, who had served the elder Hur after voluntarily accepting slavery as the price to be paid for his wife. In the final accounting of trusteeship that he makes to the son of his dead master he discloses all the data needed by a modern statistician to compute the wealth that he offered to Ben Hur. He had begun his business operations with one hundred and twenty talents—Jewish money—and, since one Jewish talent was the equivalent of five thousand four hundred and seventy-five pounds sterling, he had at the beginning six hundred and fifty-seven thousand pounds, or more than three million dollars. With this foundation he cleared five hundred and fifty-three talents, which, with his first capital, amounted to something more than the equivalent of Solomon's yearly income. At the end of the accounting, Simonides said to Ben Hur: "Thou hast six hundred and seventy talents—and all thine—making thee, O



Where a Fortune is Administered

The Astor headquarters in New York City; the door at the right bears the label, "Astor Estate;" the door at the left, "Vincent Astor"

son of Hur, the richest subject in the world!" Great wealth for a subject, but not to be compared with the wealth of such monarchs of antiquity as Solomon and Crœsus, Sardanapalus, the Pharaohs, Cleopatra, and the Roman emperors.



Commodore Cornelius Vanderbilt

Despite the wealth of her emperors—Nero with his golden house, for example—no figure of Rome has so held the imagination as an example of splendid extravagance as Lucullus. What was the occasion of his famous "Lucullus dines with Lucullus?" might be a fair addition to the questionnaires now so furiously in vogue. This was the occasion: Lucullus, whose enormous wealth was based largely upon the loot of war, was famed less for what he had than for the manner in which he spent it, albeit he was the possessor of sumptuous buildings, porticoes and baths, paintings and sculpture, and at his home at Naples he channeled the hills with vast tunnels, brought in the sea for moats and fishponds around his house, and built vast pleasure houses upon the waters. Lucullus' daily entertainments were ostentatiously extravagant, not only with purple coverlets and plates adorned with precious stones, and dances and interludes, but, above all, on account of the great diversity of dishes and the most elaborate cooking. Once, when he was supping alone, there was but one course, and that moderately furnished. He called his steward and reproved him. The steward professed to suppose that there would be no need of any entertainment since no one had been invited. "What," so ran the rebuke of the master, "did you not know that to-day Lucullus dines with Lucullus?"

One day, Cicero and Pompey met Lucullus in the Forum. Cicero asked Lucullus whether it would be a good day to ask a favor of him. Lucullus replied: "Very much so." "Then," said Cicero, "we should like to dine with you, just on the dinner that is being prepared for yourself." Lucullus, being surprised, and requesting a day's time, they refused to grant it. Nor would they allow him to talk with his servants, for fear that he should give orders for more than had been originally appointed. But this much they consented to: that before their faces he might tell his servant that to-day he would sup in the Apollo (for so one of his best dining-rooms was called), and by this evasion he outwitted his guests. For every room, it seems, had its own assessment of expenditure—dinner at such a price, and all else in accordance, so that the servant, in knowing where he would dine, knew also how much was to be

—and the home he lived in on Staten Island while he was running his ferry to New York

expended, and in what form and style the dinner was to be served. The expense for the Apollo was fifty thousand drachmas, and this much being that day laid out, the greatness of the cost did not so much amaze Cicero and Pompey as did the rapidity of the outlay.

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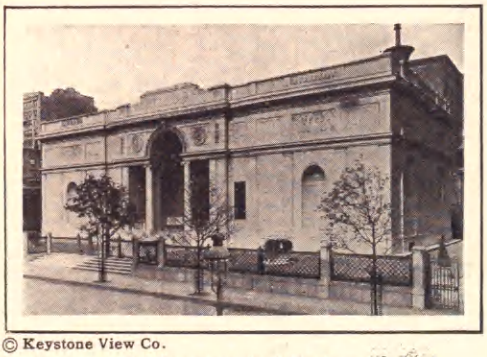
A Vanderbilt Mansion

One of the show places of New York City, a replica of the famous French chateau at Blois, France. This was built by Cornelius Vanderbilt, grandson of the ferryman

There was a long period in the history of the world, at least the western world, when great wealth concentrated in one person ceased to exist. Mankind was just emerging from that period when Monte Cristo appeared upon the scene of fiction, which perhaps accounts for his having been accepted as such a dazzling figure. In fact, in the Middle Ages, there was hardly any wealth at all, only degrees of poverty. Even kings were limited in their extravagances. The total revenue of Francis I of France was $256,000. That of Henry II of France even less, $228,000.



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A Monument of Fortune

The late J. Pierpont Morgan's private art gallery in New York City

Henry VIII of England, he of the many wives, had great difficulty in raising a loan of fifty thousand pounds. At the beginning of the fifteenth century Jacques Cœur was the richest man in France. His fortune was proverbial, as the fortunes of the Rothschilds, the Astors, or the Rockefellers are to-day. Yet, at his best, Jacques Cœur had a fortune of only $5,400,000. The total wealth of the house of Fugger of Augsburg about 1550 has been estimated at $32,000,000, though the capital of their bank was never anything like that.

Of the banking family of Fugger, James, who lived from 1459 to 1525, and was known as "James the Rich," was a typical moneyed figure of his age. Coming from a family already wealthy, he himself was a positive genius of finance. Everything he touched turned to gold. Emperors and princes went to him for loans; he bought up mines and equipped fleets. He farmed taxes for the princes of the empire; he sold indulgences for the Pope, pocketing himself a 33⅓% commission. He had his agents working for him, not only in Germany, but also in Hungary, Italy, Spain, and the New World. Like some conspicuous modern multimillionaires, he was a philanthropist, founding a library at Augsburg and building model tenements for poor workers. He was probably the first incarnation of a new

great power, that of international finance.

A Frenchman, M. Georges d'Avenel, has made a series of studies of personal and general wealth in the Middle Ages. According to him, no one, from the beginning of the thirteenth century to the end of the sixteenth century, had as much as one million dollars a year. The outlay of Louis IX in 1251, the year of the sixth Crusade, did not exceed $775,000. We may trace the royal and princely budgets down to the Duke of Orleans and Cardinals Richelieu and Mazarin before we find a personal income of one million a year. Among the strictly private citizens there was not a Frenchman before the period of the Revolution with a million-dollar income. Louis XIV had about four million dollars a year to spend. He needed all that to maintain his glory as the Sun King. The first Napoleon had more than five million, and anyone who takes the trouble to read his long and elaborate will may realize how wise and fruitful his economies were.

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Father and Son

John D. Rockefeller and John D. Rockefeller, Jr.

Familiar to all the world is the story of the Rothschild fortunes; founded by the integrity of the Jewish banker of Frankfort, who served his prince in the capacity of steward, and later sent his sons to the various countries of Europe with the injunction to intermarry. Some time before the British Government had received the news of the Battle of Waterloo, a special courier had apprized the London Rothschild of the issue of the great conflict in the Lowlands, and the advance information was turned to enormous profit by the wholesale buying of British consols. But the great fortunes of England have been based less upon lucky or wise speculation than upon holdings of land. In 1892 thirty-six persons owned one tenth of all the land in Great Britain. The first British land-owning subject in acreage extent is the Duke of Sutherland, with vast stretches of mountain and moor in the Highlands. But first in revenue derived is the Duke of Westminster, who has been called the richest man in England. The chief source of his wealth is the West End of London, which, until a century or so ago, was

Rockefeller's First Home

Farmhouse at Richford, Tioga County, New York, where the "richest man" was born and spent his childhood

open country. Three centuries ago a descendant of Hugh Lupus (Hugh the Wolf), Gros Veneur (Chief Huntsman to the King), who came over from Normandy with William the Conqueror, married a wife whose dowry was a large farm not far from the city of London, the two being linked by the river road that is now known as the Strand. The subsequent story of that farm is substantially the story of early Astor purchases on Manhattan Island miles to the north of the little city of New York that clustered about the City Hall Park and did not extend beyond Canal Street.

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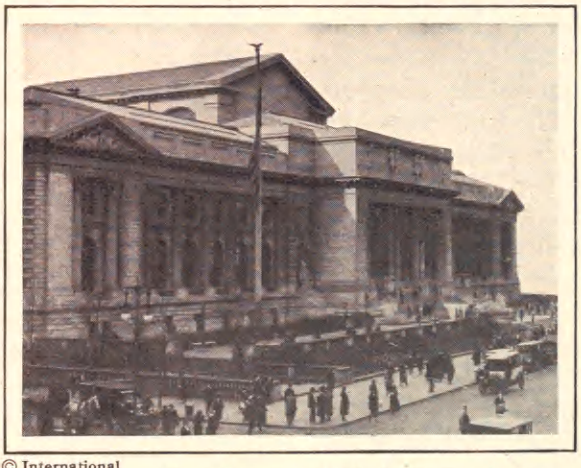
Another Famous Financier

The late Andrew Carnegie (right) and Henry Phipps, possessors of great fortunes amassed in the steel trade

In the early days of the Republic, when life was simpler and fortunes were smaller, the imagination associated a degree of plutocracy with some name of the ancient world or the modern old world. So-and-so was spoken of as an American Crœsus or an American Rothschild. To-day, as for two or three past decades, all that has been changed. A European achieves astonishing wealth, and by virtue of it wields unusual power, and straightway he is dubbed a French Morgan, a Spanish Carnegie, a German Rockefeller, a Russian Gould, a Dutch Russell Sage, a Swiss Vanderbilt. The fortunes of a Fugger or a Cœur, so conspicuous a few centuries ago, would, in the United States of to-day, attract the attention of only their immediate neighbors and the internal revenue tax collectors. Even that limited distinction would probably not be theirs long, for the venturesome spirit that made Fugger and Cœur in their age would be likely to lead swiftly to disaster in encounter with more astute and powerful financiers.

Staggering are the figures involved in the purchase of the Carnegie interests by Morgan. The Laird of Skibo, wishing to devote the rest of his life to philanthropy, was willing to sell out. Morgan asked him what price he would take for all his plants. "Three hundred million dollars," was the reply. The terms were accepted and carried out, but, after a time, Carnegie's



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Three Fortunes Built This

The New York Public Library, into the building of which three fortunes entered—Astor, Tilden, Lenox. Carnegie gave many of the buildings of the 43 branches of this library

early satisfaction gave way to doubt. He felt that he might have asked and obtained more. There was a story current that Morgan and Carnegie met on an ocean liner, and at the breakfast table the ironmaster said: "Do you know, Mr. Morgan, I have been thinking it over, and I find I made a mistake. I should have asked you another hundred million for those Carnegie properties." "If you had," said Morgan, "I should have paid it." Thereupon Carnegie lost his appetite.

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John D. Rockefeller, Jr.

Son of the great financier, who takes an active part in public and financial life

Even more suggestive of the fairy tale than the fortunes won by financial manipulation are the fortunes based upon the holding of land in a great city, and growing dizzily as that city strides on with seven-league boots. A hundred years or so sufficed to transform the holdings of woodland and marsh of the Astors, and the Goelets, the Wendells, the Rhinelanders, the Schermerhorns, and the rest into densely populated sections of modern New York City. Of all these landed fortunes that of the Astor family is most typical and conspicuous. At the close of the War of the Revolution the first Astor reached America with "One good suit of Sunday clothes, seven flutes, and five pounds of money." In the course of time he won what was then a considerable fortune in fur-trading, and he invested it in land lying to the north of the little city clustered about the lower end of Manhattan Island. By 1831 the Astor Fur Company had a capital of about a million dollars, with yearly profits of half a million. When, in 1848, John Jacob Astor the First died at the age of eighty-four years, the five pounds that he had brought to America had grown to twenty million dollars. When, in 1875, his son, William B. Astor, died at the age of eighty-three his fortune had grown to approximately one hundred million. Fifteen years later it had more than doubled. The Astor fortune of today is in a measure a matter of conjecture, but the most conservative estimate places it at considerably more than a half billion dollars.

In 1889 a writer in the "Forum" placed the wealth of Cornelius and William K. Vanderbilt, grandsons of the first Cornelius, at $100,000,000. Adding the fortunes of the other members of the family, the Vanderbilts then possessed about $300,000,000. Gustavus Myers, figuring twenty-two years later, estimated the actual and potential Vanderbilt fortune at $700,000,000. Commodore Vanderbilt, who began life as a ferryman between New York and Staten Island, made ninety millions within fifteen years, the years immediately following the Civil War. When he died he was worth $105,000,000. Of that fortune he left $90,000,000 to

his elder son, William H. Vanderbilt. Within seven years the latter almost doubled the inheritance. The bulk of the fortune left by William H. was inherited by the two sons, Cornelius and William K.

The will of Jay Gould disclosed an estate of $77,000,000, but the general belief has always been that the real fortune left was far greater. The wealth of Senator Stephen B. Elkins of West Virginia was at one time conservatively estimated at $50,000,000. Russell Sage left a fortune estimated at considerably more than $100,000,000. The extent of the wealth of James J. Hill is a matter of surmise, but its magnitude is indicated by the fact that John S. Kennedy, a New York banker who was associated with him in a railway deal, left, at his death in 1909, an estate amounting to $60,000,000. But even these astonishing figures dwindle in comparison with the wealth of John D. Rockefeller, whose yearly income is probably as large as the entire fortune left by Commodore Vanderbilt, the richest magnate of his day.

A Symbol of a Great Fortune

The Russell Sage Foundation Institute, one of the philanthropies to which a portion of the Sage millions has been devoted. The endowment is about $15,000,000, given in memory of her husband by Mrs. Russell Sage. The purpose of the foundation is "the improvement of social and living conditions in the United States"

Just as the alchemist of old has been replaced by the modern scientific laboratory, so the romantic fortunes of old give way to the wealth which is being amassed to-day with more exactitude and precision. Even the fortunes of kings and emperors, mighty in the last decade, have dwindled or disappeared altogether. What shall we say for the Czar's fabulous wealth? It has gone as though it had evaporated. And the Hapsburg millions—will the America-European syndicate be able to rescue them from the predicament in which war partition has placed them?

Yes, we are experiencing the dawn of a different day. Where the old fortunes were, in many cases, obtained by the easy methods of inheritance, fraud, and graft, the new are being built by taking advantage of fundamental laws. The modern Midas performs his miracles by cooperating with the great basic law of action-reaction, instead of trying to run cross current or counter to it. He looks ahead and lays his plans with the assurance that he that performs a service will be definitely rewarded. He observes the three following rules:

(1) Do something before the other fellow does it.

(2) Do something the other fellow will not do.

(3) Do something better than the other fellow does it.

In closing, let me say that there is nothing intrinsically wrong in the accumulation of money if one performs a service in so doing, and utilizes the accumulation for the benefit of society.

BEHIND THE SCENES IN A MUSEUM OF NATURAL HISTORY

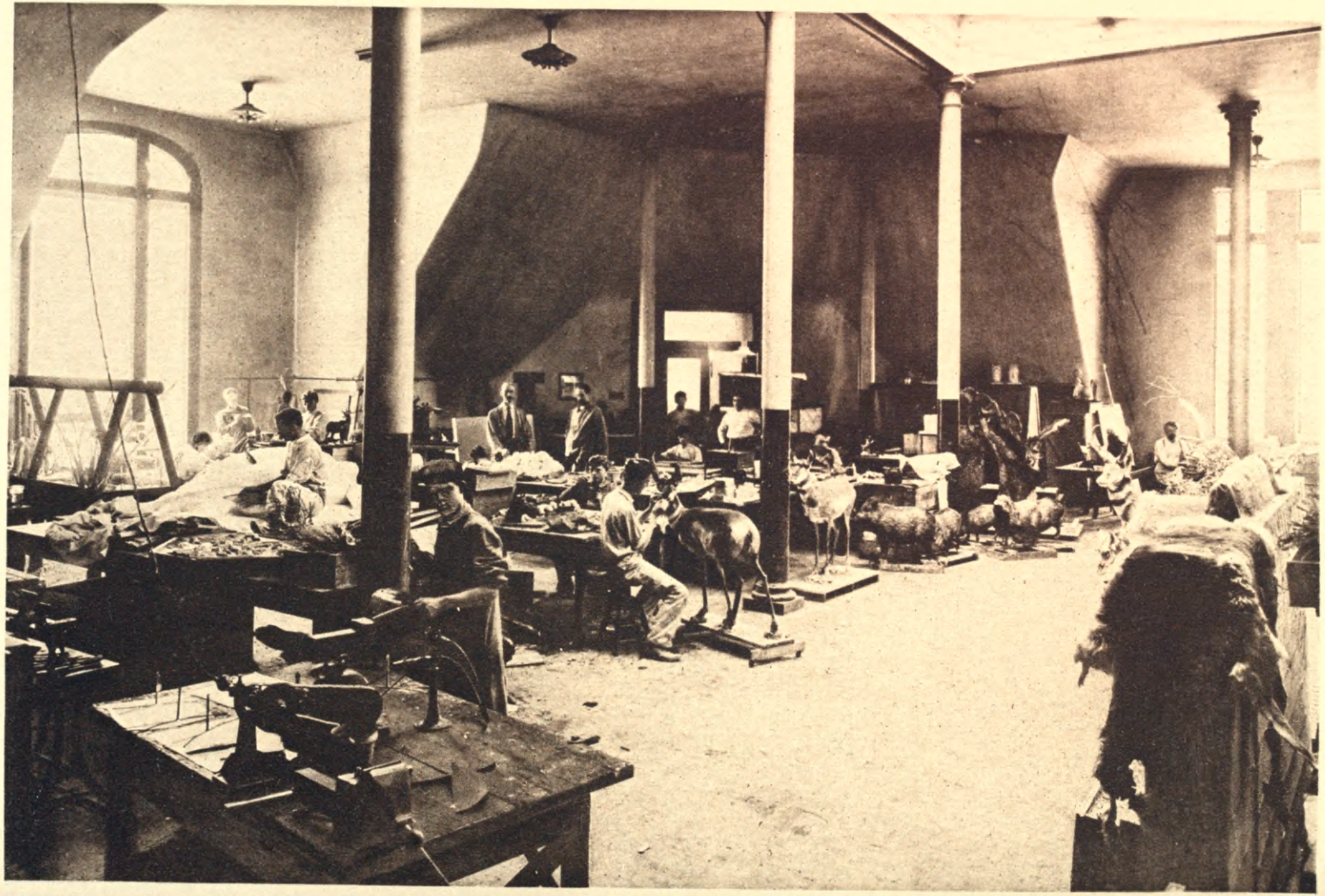
TWO INCHES OF SEA BOTTOM SEEN THROUGH A MAGNIFYING GLASS
Showing sea life magnified fifteen thousand times

The following article—and the photographs illustrating it—have been specially prepared under the direction and with the approval of Dr. F. A. Lucas, director of the American Museum of Natural History, New York City

TRYING ON A SKIN OVER THE MODEL OF A WILD BOAR

IT is only within recent years that display groups and other picturesque exhibits have been regarded as a proper and legitimate feature of museum work. In 1874 a great naturalist, Dr. Coues, said that elaborate setting and mounting, artificial rocks and flowers, were entirely out of place in a collection of any scientific pretensions, and that they took up too much room. Severe simplicity was the right thing. Birds looked best in uniform rows, assorted according to size. We wonder how Dr. Coues would feel if he went into the 710-foot long Museum which has come up since his time in New York. One of the glories of the scientific world is the collection of the American Museum of Natural History. The first group in the Museum dates back to 1869, when the collections were painfully formed in the old Arsenal in Central Park. This was "An Arab Courier Attacked by Lions." It was theatrical, full of blood and thunder, and belonged in Madame Tussaud's or the old Eden Musee, but it served its purpose, and bad as it was, it was an attempt to show life and action and to put what was then called "ginger," and now called "pep," into natural history—where it was badly needed. If you cannot interest the visitor you cannot instruct him. The ordinary "animal stuffers" went their way and a new class of artist rose, the taxidermist-sculptor, who has a more difficult task than the artist-sculptor. He has not only to prepare his model, but to fit over it a more or less unyielding hide. Years ago animals were really and truly "stuffed." They were suspended head downwards and rammed full of straw until it seemed as though the hide would burst. The next step was to substitute tow and excelsior for the straw. Next a manikin of wire-netting and papier maché was introduced, and this, while a great improvement, was soon displaced by modeling the animal in clay and finally casting in plaster to which the skin could be snugly attached. Great names were made in the scientific world by men like Hornaday, and Akeley, who smashed the fetters of tradition and developed a new art.

The evolution of groups led to the evolution of accessories, and strange trades and



ONE OF THE WORKSHOPS OF THE AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK

Where animals are made, mounted and put in condition for exhibition

craftsmen began to invade the sober precincts of the Museum. Natural flowers and foliage were given up for artificial replicas which would hold their color and shape in our trying climate and steam heat, that destroyer of books and museum specimens. The early bird groups were meritorious, but mediocre, as judged by modern standards, and while good enough still to find a place, they do not compare with the splendid group of a few years later.

A new industry was invented. This was the "preparator." Now, a preparator is one who prepares, and that is exactly what we see him doing in the accompanying pictures.

We are now about to enter the place of mysteries—the preparation laboratory of the American Museum of Natural History, where the wonderful exhibits are prepared, and even in some cases "manufactured." It has been said that a museum is like an iceberg, one-sixth or seventh only being above the surface. This is almost literally true; for about eighty per cent. of the material is in storage and only about twenty per cent. is seen by the public. This does not mean that we pass whole rooms filled with boxes; but it does mean that we pass through whole rooms filled with specimens put away as neatly as a merchant carries his stock. They are tagged, docketed, card indexed, and put away in fireproofed and mothproofed vaults, not underground but where they can receive light and air when necessary, and where they can be freely examined by the special student. The study collections, as the name implies, are not only for the benefit of students, but to preserve a record of our vanishing animal life and the life and customs of our own and primitive peoples. In the case of Natural History the majority of the specimens are in the study series, not only because they would be ultimately ruined by exposure to light, but because the display of all the material would only confuse the visitor; for what would be the use of showing hundreds of stone axes as near alike as the Indian maker could fabricate them, when one or two typical examples would do just as well? Moreover, a museum, even if it has 470,789 square feet of space, or the

A DUCK HAWK GROUP

A beautiful example of taxidermy and Museum scenic art

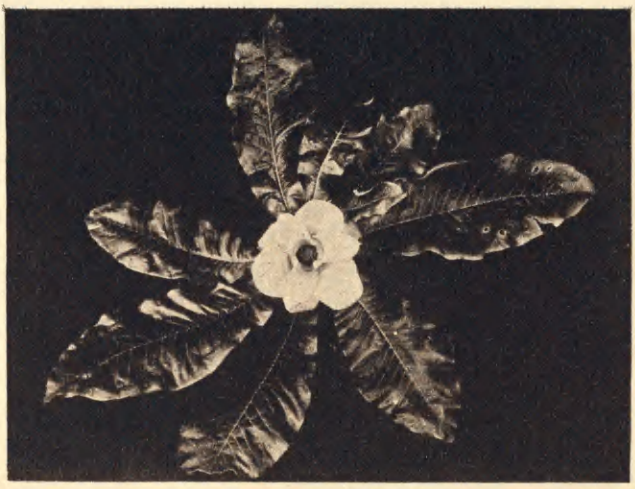
equivalent of a ten-acre lot, cannot exhibit everything, so a careful selection is made of objects of the greatest educational value and displayed so as to enhance their interest and attractiveness. The reserve collections are enormous. Thus, in the section devoted to the history of man, called "anthropology," there are 100,000 specimens carried in thirty-three fireproof storerooms, and if you are a student of them, you can see 2,000 skulls to settle some mooted point. There are some 7,000 fish preserved in alcohol and kept in tanks and jars, all of which shows us why our legislative authorities excepted alcohol for "scientific purposes" from the Eighteenth Amendment. Of fossil fish there are 10,000 and there are 15,000 frogs, salamanders and reptiles. There are 60,000 specimens of the lower forms of life called invertebrates besides those enumerated below, and 100,000 shells. Insects do not take up much room; but 500,000 is a large number even for a museum, while one expedition not yet fully catalogued, comprises 5,800 mammals, 6,200 birds, 4,800 reptiles, 6,000 fishes, 3,800 ethnographical specimens besides more than 100,000 invertebrates. This was the result of six years' work in the Congo, and shows the great scientific value of these costly researches made by the Museum. There are 150,000 bird skins and a vast quantity of eggs and nests. There are more than 900 type specimens of fossil mammals, and several hundred type specimens of fossil reptiles and amphibians. But why swell the list, for we are already well up in the million class and the receiving clerk is still on the job?

A GROUP OF MONARCH BUTTERFLIES
Posed as we find them in outdoor life

After you have walked for hours over the floors you will think you have seen all the 470,789 square feet of specimens; but, indeed, you have not; you have seen only 271,886 square feet, or fifty-seven per cent. of the whole. It is astonishing that forty-three per cent. of the entire floors are given up to storage space, preparation rooms, and laboratories, but such is the case, and in the plans for new additions (for while eight sections are completed, nine future sections are contemplated at a cost of $10,000,000), and these will carry vastly increased space for the laboratories. As President Osborn states in his latest report, there was never a time that the Museum was so firmly established in the confidence and esteem of both the people and the government of the City of New York as at the present; for if the city will furnish the buildings, the outer shell, the Museum will furnish all the exhibits at their own expense; certainly a noble proposal.

To return to the laboratories. It is difficult to begin, for you could start in the basement, or in the attic, or you could stop on any floor, for it would not be efficient to consolidate all these workrooms and laboratories. In the case of very large objects they must be finished where they are begun. For example, after you have "laid down" the keel of a whale and built up all the great bulk you could hardly get him out of the exhibition hall even if it were safe to move the great animal. Do not get the impression, however, that the scattering of these departments makes for inefficiency, for it does not. While the carpenter shop is all right in the basement, the glass-blower and wax-modeler must have the best of light upstairs. Perhaps the carpenter shop is the logical place to begin; for here much of the "insides" are made, such as frames for our friend the whale, "armatures," as they are called, or frames reinforced with iron for the sculptors to model on, and the thousand and one things which are always needed in a museum. Here are built shelv-

ing, drawers, cases, etc., when metal is not required, but, following the trend of the times, cases are usually now made of metal, and even this is done in the building. The Museum is constantly getting up new ideas in the line of cases, etc.



WAX MAGNOLIA FLOWER
Modeled by Milton Copulos

The next step, as it were, would be the mounting of animals. This is, indeed, a most intricate and interesting process and has been referred to at quite a length in another portion of this article, so we need not spend time here except to say that sometimes months and even years are required to complete a great group. By a new process the great animals, such as elephants, may be left out in the open air, adding much to their realism. The animals are so treated that they require only the dusting and cleaning given to a bronze statue. The allied arts of the sculptor and the painter are laid under contribution, and some of the paintings of prehistoric animals and of early man are masterpieces in the truest sense of the word. Many transparencies or photo-enlargements have to be colored before being placed in position, and nearly all the groups require back-grounds, either on canvas, or on glass in the case of the marine groups. Even the lantern slides, of which there are 25,000 or more, are often colored so that the lessons of the Museum may be taught elsewhere with fidelity to nature for those who cannot visit the institution.

In making a large group often an artificial jungle must be built, and here wood, wire, celluloid, wax flowers, leaves and twigs are required. It is here the skill of the Curator comes in. He has a staff of highly skilled men of curious and often obsolete trades, to whom only a word is sufficient, for they know their job perfectly and are so enthusiastic that labor troubles are unknown and there never has been a "strike" in a group. After everything is planned, each man gets ready to make his addition, and some of the orders are considerable. For example, a long time is consumed in blowing 100,000 pieces of glass, many of them

SPECIAL COLLECTIONS ARE AVAILABLE FOR THE BLIND
For the children small models are made

A PART OF THE FLORIDA REPTILE GROUP

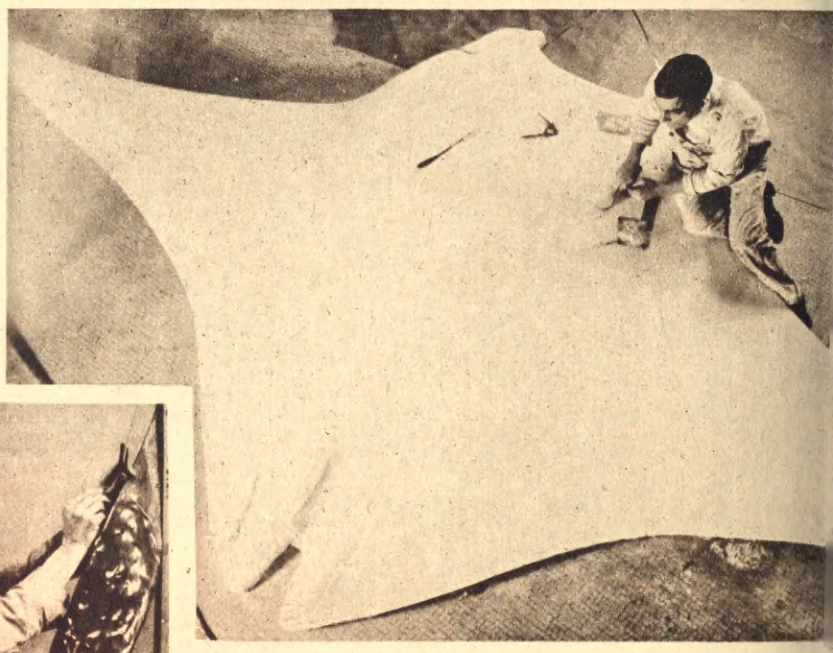
Showing turtles, frogs, snakes, etc., and above, two white aigrets — a wonderful artificial tropical composition. The mosses and vines are real but colored artificially so as to hold permanently the effect of nature

tiny threads; but they all have to be welded home with heat, a tedious performance. Then the makers of wax leaves and flowers prepare their molds from the original wherever possible, make and color them and assemble them in position. Meantime the

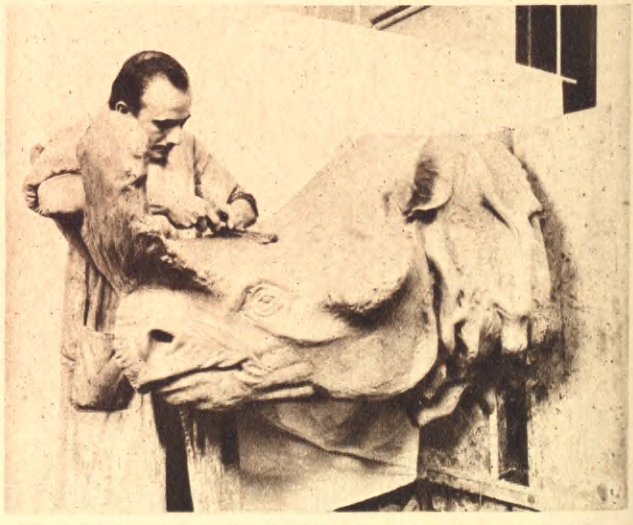
MAKERS OF ANIMALS AND PLANTS

HOW AN IMMENSE DEVIL FISH IS REPRODUCED AT THE MUSEUM

The photograph is taken from above



MAKING A WAX SEA WEED FOR THE BRYOZOA GROUP



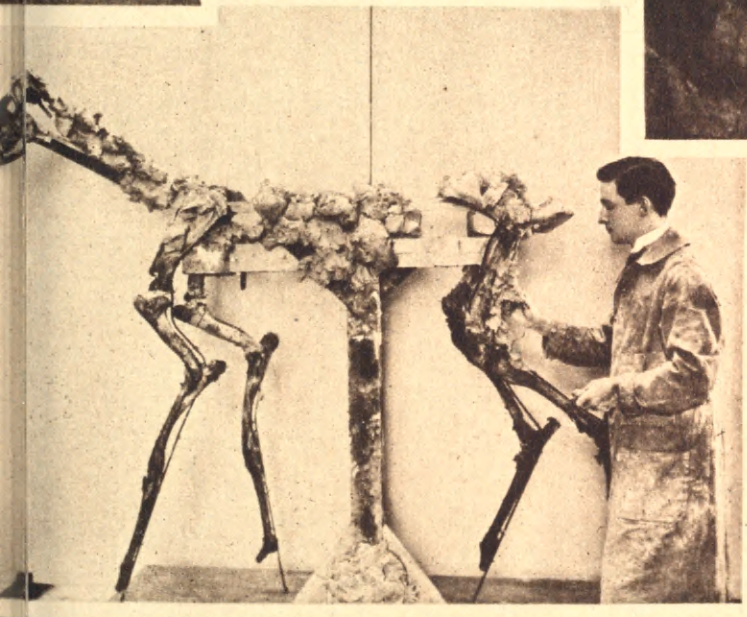
MAKING AN ANTE-DILUVIAN MONSTER OUT OF CLAY

This titanothere is a huge ancestor of the rhinoceros of today

MODELING A GREAT LIZARD, THE REAL ANIMAL SERVING AS A MODEL

THIS MAN IS AN ARTIST IN METAL

He makes tin flowers



MOUNTING THE PARTS OF A WAPITI (ELK) ON ITS FRAME

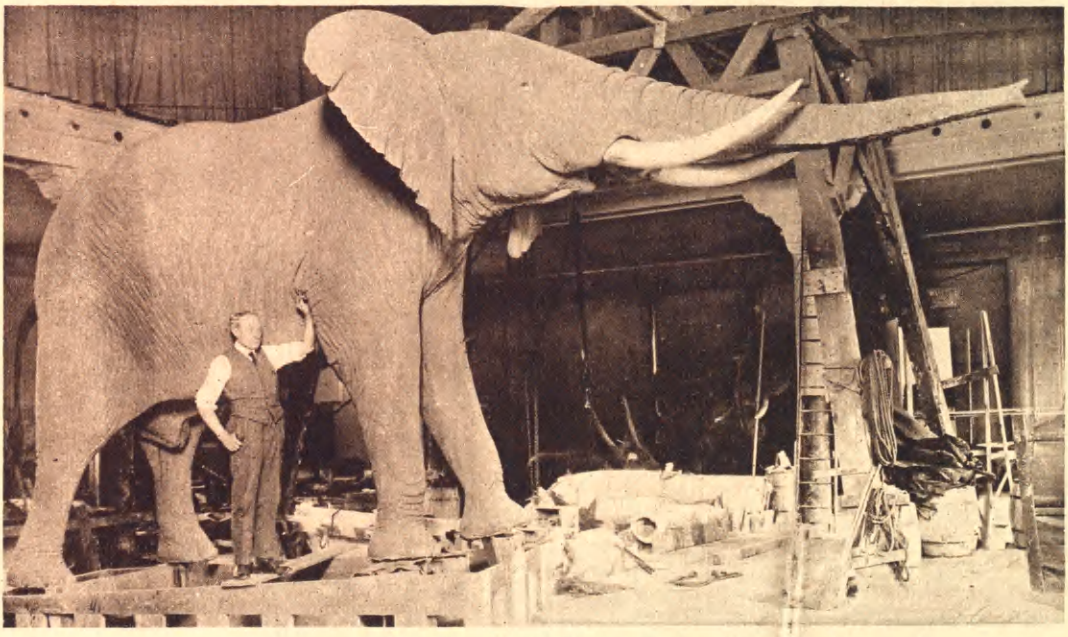
When finished this quadruped will present a very creditable appearance in the stuffed animal class

FOR THE MUSEUM

carpenter has prepared his framework, the artist has painted the background, and the electrician has provided for the light, for while groups should have daylight as far as possible, still artificial light must be provided for dark winter days and evenings when the Museum is open. Rocks, earth, sod, etc., are prepared and inserted, and, finally the animal or bird is placed, for all time, in a lifelike position. The Curator criticizes the completed work, and, after him, the director and his scientific associates. Everything must be correct to the smallest detail, for a museum must never show a specimen or group which will not pass muster with the expert. A museum of misinformation would be a curse to the community.

"LAYING THE KEEL" FOR AN ARTIFICIAL WHALE

Geological specimens differ somewhat from the fact that they are very bulky and are likely to be much broken and scattered, so that preparation really begins in the field where the geologists cover the bones of the extinct animal with plaster of Paris and cover up the specimen with burlap. When the specimen, which may come from, say, Wyoming,



CARL E. AKELEY AND HIS MOUNTED ELEPHANT
This great animal is now completed and on exhibition

GROUP SHOWING GRAY, OR TIMBER, WOLF CROSSING THE SNOW
A most successful reproduction of wild life

arrives, perhaps, on a flat car of its own, it is carefully undone, the plaster is chipped off, and the bones are separated from the rock and put together, or "articulated," as it is called. Sometimes the animal is placed in a natural position, if there is enough of him, and sometimes on a slab. Extinct animals have a great fascination for children, and the birds have to look to their laurels.

The ethnological groups call for great skill; for the figures must be realistic and in scale, and here the skill of the sculptor is brought into play. Archaeology deals with the more distant past of the human race and the exhibits are not quite as spectacular and do not require so much preparation. A collection of woods requires special treatment and the beauty of the flowers, leaves and fruit in natural size are very great. If many leaves are to be made, special metal molds are used to cut them out. The air-brush is used to color glass, wax models or anv other object that can be colored, a spray of color being projected against the object by compressed air. The jet is controlled by the artist at the tip of the so-called "brush," which is really not a brush at all.

Wax models are used all through the museum for both accessories and exhibits proper. Take, for example, a crab or a frog. In these cases the color of nature cannot be retained, so a wax frog with glass eyes is colored so naturally that we can almost hear him call, and see him jump. The crab is "taken down"; a new body is modeled and inserted in the shell; legs, claws, etc., are articulated; the shell is covered with wax and painted the way the *crab ought to look*, and he is good for all time, or until museum fashions change; for like everything else, new ideas appear every thirty or forty years. The handy man with no special trade but with more than a smattering of all trades is very useful in a museum. A man who can make an artificial flower out of tin is a very valuable asset for his talents can be put to many uses.

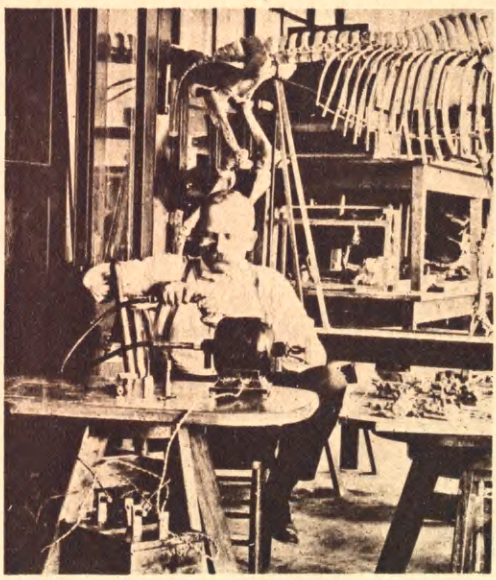
ARTIST WORKING ON THE COMPOSITION OF A LEMUR GROUP OF PRIMATES

Birds lend themselves more readily to groups than does any other class of animal for they combine beauty of form, pose and color with moderate size which

MR. ROY W. MINER, ASSISTANT CURATOR OF INVERTEBRATE ZOOLOGY
And his associates in the New York Museum of Natural History

make for portability and small case space, so it is little wonder that bird groups predominate in most museums. In this connection the name of Dr. Frank M. Chapman should be mentioned as he did much to bring such bird groups to perfection. Animals follow birds very closely. There are many triumphs and not a few failures. After that there are fishes to be disposed of, and insects, and invertebrates which are the hardest of all to show.

Fishes are the pest of the museum curator. They are not very attractive when stuffed and look very pudgy in alcohol. Does this daunt the "preparator"? Not at all. He sets deliberately to committing the crime of substitution. He furnishes "something just as good," so the artificial fish goes into the cases with cloth and wax leaves, celluloid seaweed and glass eyes. Now we truly have a wax frog, a painted crab (showing the real colors on his shell), and a celluloid fish. These truthfully hold up the mirror to nature and let it reflect an image of nature as she looks alive and not as she appears when dead and shriveled up. The accessories of marine groups, corals, seaweed anemones, etc., are very exacting and



A MENDER OF PREHISTORIC ANATOMY

have to be produced in wholesale quantities to give realism. When we come into the kingdom of the water we find that lighting is a large factor and every artifice of the stage carpenter and electrician is brought into play. Even the fishes of the deep sea which are luminous in their two or three miles depth of water (when they want to be) have lent themselves to a group which lights itself up every few seconds, thanks to Mr. Edison and his current.

The groups showing marine life in the lower forms designed by Mr. Roy W. Miner, which fill one end of Darwin Hall, are extremely popular and deservedly so. The casual spectator who looks through the forty-inch magnifying glass showing a minute fraction of the sea bottom in the Bryozoa group is not merely looking at some cardboard cut-outs cleverly lighted; he is looking at glass and celluloid seaweeds, and other plants, and at an exhibit that required hundreds of sketches and months of time to build. Such an exhibit costs at least $5,000, and at this point it should be made clear that the expense for exhibits is not borne by the city, for not one dollar of the taxpayers' money goes into anything but the bare buildings and the maintenance, the trustees supplying all the funds for exhibits from current dues of members, trust funds, and often from their own pockets. It is a splendid thing to know that a museum balks at no reasonable expense to give a well-balanced exhibit even though it may occupy only the space of one window. The most popular groups are the "Tide Pool Group," which is perhaps the most elaborately labeled exhibit in the world, the "Wharf Pile Group," and the "Sea Worm Group." The general method of preparing such a group is to find a locality which has the proper marine life, such as Wood's Hole, Mass. Studies from nature are then begun. Drawings in color of the bottom are made with the water glass, a specially constructed adjustable mirror of plate glass, which can be placed on the sea bottom in shallow water and adjusted to any angle. The living animals are studied both in their natural surroundings and in aquaria in the laboratory, and ana-

TWO STAFF ARTISTS WORKING ON THE COMPOSITION OF THE FOREGROUND OF THE TIDE-POOL GROUP

tomical and color sketches and photographs are made to record the conservations. Meantime a miniature sketch model was constructed on the scale of three inches to the foot to arrange composition and to work out problems of perspective and artistic effects. This is also done in the field. The rest is done in the museum. First a suitable frame is constructed for the full-sized group; then the sea bottom is modeled and life-like wax dummies constructed of the various animals and set in place to determine questions of space, etc. The final models are made in wax, glass, sheet celluloid or liquid celluloid painted over a mold and all put into place. For snails and crabs the procedure already outlined is adopted. The background is a transparent photograph on glass in natural colors beautifully painted by hand. The illusion of distance is aided by a second transparency placed in front and having upon it the colored photographs of the nearer portion of the view. The under water effect is given by painting portions of the background on successive sheets of glass and by the effect of daylight passing through the entire series.

These groups are placed behind windows and often the effect of a cloud or sunshine is most realistic. Some of these groups contain as high as 300,000 pieces, in fact, nobody knows; but Alice in Wonderland never saw anything as wonderful as this demonstration of how the blighting hand of nature has been paralyzed for the moment by the hand of man. When you go next time to the big museum look at the "Tide Pool Group" and moralize on the fact that $10,000 has been expended on this group by the trustees on labor alone without the countless studies and field work in order to give *you* a grasp on the realities of natural history even in its lower forms, and you will go away from the great building with a deeper insight into the secrets of life. We learn there that it is not simply the larger forms that count in the natural world, but that the tiny living things are just as important and interesting.

THE BRYOZOA GROUP

Lowly forms of invertebrate life found in ocean depths

ANIMALS OF THE WHARF PILES

Minute marine animals in groups of this kind resemble plants; some have motions of their own, others have not. This is one of the most effective artificial compositions in the museum

AN ASSEMBLY OF NATURAL HISTORY COLLECTIONS READY FOR CIRCULATION

These collections are furnished free to public schools for nature study

THE PICTURE THAT RUINED REMBRANDT

WHEN Rembrandt, "Prince of Shadows," was in his early twenties, he left the old university town of Leyden, where he was born, and went to Amsterdam to make his fortune as an artist. By the time he was thirty he was the richest and most famous painter in Holland. But in another ten years friends, popularity, and fortune were lost to him, and the chief cause of his downfall was the best picture he ever painted, "The Night Watch."

In the Royal Museum, Amsterdam

"The Night Watch"

When this picture was painted by Rembrandt van Rijn, in 1642, it was called "The Company of Franz Banning Cock." Many years later, French writers, misunderstanding the lighting of the picture, called it "Ronde de Nuit," which the celebrated Sir Joshua Reynolds translated into "The Night Watch"

Soon after the youth arrived in the Dutch metropolis, he painted "A Lesson in Anatomy," a portrait group of well-known physicians. This was highly praised for its likenesses and brush-work. Pupils flocked to his studio, offering golden florins for the privilege of working under his direction. Prosperous merchants and their families applied in such numbers to have their portraits painted that the artist had more work than he could do.

He was already well established when he met the auburn-haired Saskia Uylenborch at her cousin's picture store. Their life for eight years was like a Rembrandt painting. It varied between brightest light and darkest shadow. They lived in a splendid house, filled with extravagantly beautiful furnishings. Rembrandt was never weary painting his attractive wife, decked in brocades and jewels. He gained equal renown for his art, his possessions, his gay spirits, and his headstrong, profligate habits. He painted his sitters in his effective, original way, and never paid any attention to their wishes. Patrons demurred, but they did not desert him until the trouble over "The Night Watch" started. In 1642, when he was about 35, he began this great canvas, which shows the civic guard of Amsterdam leaving the company quarters. Actually, the sortie was in the daytime. The somberness of the shadows led critics of a later era to think it represented a night scene. When the canvas was cleaned in 1889 the colors came out brighter and the daylight effect intended by Rembrandt was revealed.

In the large towns of Holland the aristocracy organized to keep order in the streets. Rembrandt was asked to paint the pictures of Franz Banning Cock, of the Amsterdam guard, and his rich young aides. The cost was to be divided between twenty-five or thirty members. Rembrandt, at the height of his powers, readily accepted the commission, foreseeing how he should make the canvas glow and move in brilliant sun and velvet shadow. The chief portrait interest was centered on Captain Cock and his lieutenant. The rest of the group were mere puppets for Rembrandt's brush to play with.

He made a masterpiece—he himself had infinite satisfaction in it, for it expressed, as no picture had ever done before, his gift for handling light and variations of light. But the guardsmen were far from pleased. Except for the few whose faces were clearly to be seen, all refused to pay their share. The disgruntled guardsmen and their friends withdrew their patronage from the master. From that time his face was turned toward the valley of shadows. His beloved Saskia had died. His house and goods were sold to pay his debts. He had but one son living, and then the son, Titus, died too. Poor, lonely, disparaged, Rembrandt spent his last years creating pictures that are now almost beyond price. When he died at the age of sixty-two, there was hardly enough left in his purse to bury him.

Gene Berton.

A GORILLA THAT LIVED LIKE A HUMAN

By WILLIAM T. HORNADAY, Director New York Zoological Park

A REMARKABLE story of a gorilla is told by Miss Alyse Cunningham, a young English woman who brought up the much-discussed "John Daniel." The story is remarkable because of the unusualness of her experience. A full-grown male gorilla, the most powerful and ferocious member of the monkey family, has never been captured; few baby gorillas have been secured by animal collectors, and scarcely any gorillas lived long in captivity. Miss Cunningham, who was brought from London as a last resort to save John Daniel as he lay dying in the tower at Madison Square Garden, New York, has given, in the *Zoological Society Bulletin*, the first detailed account of her experience. I have taken the facts for this article from it.

Courtesy, New York Zoological Society Bulletin

"John Gorilla"

The remarkable animal who was a member of a human family. This picture, taken several months before his death, was made while playing with his mistress's three-year-old niece

In December, 1918, Major Rupert Penny, of the Royal Air Service, bought John Daniel, or, as the Pennys named him, "John Gorilla," from a London department store. John, two years old then, was slowly dying, kept, as he was, in an atmosphere of 85 degrees during the day and left in the empty store at night to shriek with terror and lonesomeness.

"Rickety" and miserable, little John was taken to the Penny apartment and dropped into a temperature of 65 degrees, with unlimited fresh air. He weighed only 32 pounds. His cold got better at once, and he began to eat normally. But John was still lonely at night, so Major Penny moved his bed into the room adjoining John's, and left the door between open. Thereafter John was contented.

Miss Cunningham, Major Penny's niece, took John's feeding in hand. She put an assortment of food suitable for him—bananas, oranges, apples, grapes, raisins, currants, dates, berries, and a very few nuts—on a special high shelf. John regarded this as forbidden fruit and enjoyed stealing it. This, and the natural sweetness of his spoil, led him to eat liberally. Milk was his mainstay; at first he drank a quart a day, later three and one-half quarts. He loved roses—to eat! If they were the least bit wilted, however, he would not touch them.

The next step in John's education, training him to civilized human habits so that he might have the liberty of the apartment, Miss Cunningham accomplished by handling him like a child. At first he did not know what was wanted of him and, throwing himself on the floor, would scream despairingly. Soon, he got the idea, and at the end of six weeks was awarded the freedom of the apartment. "Thereafter," says Miss Cunningham, "he would run up-stairs to the bathroom of his own accord, turn the doorknob of whatever room he was in, and also open the door of the bathroom. At night he would get out of bed by himself, go back to bed, and pull the blankets over himself quite neatly."

All this time John was feeling fine and growing rapidly. His room was equipped with a regular bed, and he always climbed into it at eight o'clock. He loved to stand on the top rail at the foot and jump down upon the mattress—like any boy.

John liked to play games with Major Penny, hide-and-seek, or blind-man's-buff. In the dark he was very cautious; he would never go into a dark room without turning on the light. In turning on a faucet to get a drink he was always careful to turn off the water when he had finished. He delighted in getting into a warm bath and sponging himself.

At meal times John sat at the table and behaved well. He ate slowly, and never snatched things. He always took tea in the afternoon, and drank much water.

John was fond of children, particularly Miss Cunningham's niece, three years old. "They used to play together for hours," she says, "and he seemed to understand what she wanted him to do. If she cried, and her mother would not go and pick her up, John would always try and nip the mother or give her a smack with the full weight of his hand, evidently thinking she was the cause of the little child's tears."

"John seemed to think that everyone was delighted to see him, and used to throw up the window whenever he was permitted. If he found the sash locked, he would unfasten it, and, when a big crowd collected outside, he would clap his chest and his hands. When told, he would always come in, shut the window, and lock it. But he was afraid for others; if anyone looked out of an open window he would push them away."

John was never trained to do tricks. He simply lived with a family of civilized people, and, like a child, adopted their mode of daily life.

This, Miss Cunningham says, is the cleverest thing John ever did: She was dressed to go out and sat down for a moment. John came to her and wanted to sit in her lap.

"Don't let him! He'll spoil your gown," Mrs. Penny interposed.

When Miss Cunningham said "No," John lay on the floor and cried like a child—for a minute. Then he stopped, looked about, rose and found a newspaper. He carried it to Miss Cunningham, spread it on her lap, climbed up, and contentedly sat down.

"Even those who saw it said they would not have believed it, had they not seen it themselves," said Miss Cunningham. "Both my nephews, Major Penny and E. C. Penny, and Mrs. Penny were in the room and can testify to the actual occurrence."

In March, 1921, John weighed 112 pounds and stood 3 feet 4½ inches high. He had become, as Miss Cunningham expressed it, "a very great tie." No one could manage him, outside of the Penny family.

At this juncture, an offer was made by a stranger to transfer John to other hands. The Pennys were told that their gorilla would be sent to Florida to live in a second Garden of Eden. With this understanding they sold him.

The Florida garden proved to be a traveling show in New York. Surrounded by strangers and visitors, seeing no one that understood him, or whom he liked, the inevitable happened: John became fatally lonesome, lost appetite, lost courage, and finally fell ill.

By the time I managed to pay him a visit, he was sick abed in the Tower, and incommunicado. Miss Cunningham was summoned by cable; she started from London without delay, but poor John Gorilla died in the last week of April, 1921, a week before his beloved friend arrived.

Courtesy, New York Zoological Society Bulletin

Miss Cunningham and John

$19,000 FOR 2 TWO-CENT STAMPS

A SERVING girl's subterfuge was responsible for the first issue of Government postage stamps. Up to eighty years ago, the sender of a letter paid no money to have it forwarded. The addressee had the privilege of paying the postage or refusing to take the letter. Ingenious persons used to defraud the British Government by using a code on the envelope. The message was conveyed by symbols agreed on by the correspondents. One day an Englishman named Rowland Hill saw a maid in a country tavern decline to receive a letter, saying she had no shilling to give the postman. The visitor gallantly offered to pay. To the girl's confusion he then insisted that she open the letter. She drew out a piece of blank paper. The message had been on the envelope, in cipher. Hill's indignation led to his exposing the practice in a pamphlet which advocated the prepayment of letters as the only one fair to the Government.

Brought Highest Price

A pair of two-cent stamps like this, offered at the Ferrari sale, brought $16,212 plus $3,000 tax

The first adhesive postage stamp was issued by Great Britain in 1840, under the administration of Sir Rowland Hill. One of the first colonies to follow the example of the mother country was the island of Mauritius in the Indian Ocean. A local watchmaker struck two dies and made five hundred impressions each for a one-penny and a two-penny stamp. By mistake the engraver cut the words "Post Office" into the copper plate, instead of "Post Paid." Nearly all the new labels were bought by the governor, who happened at the time to be giving a ball. Most of the twenty-two copies of the issue now in existence were taken from envelopes that contained the invitations to Government House. Used one-penny Mauritius stamps of the year 1847 now bring thousands of dollars at auction. But, though they are the most widely sought in the world of collectors, they are not the rarest.

The most precious bit of paper known, of its size, is an ugly little red square printed in British Guiana in 1856. In that year the postmaster-general of the colony was waiting for a fresh supply of stamps from England, when there came an unexpected run on the post office. As his stamp supply was nearly exhausted, the postmaster ordered an emergency issue and gave the job to the newspaper known as the *Official Gazette*. The printer sketched a rough design, with a Latin motto and a sailing vessel in the center. The cut of the ship he had been using in the *Gazette*, at the head of the column that recorded the movement of shipping. When the sheets of home-made one-cent and four-cent stamps came from the press, the postmaster countersigned the copies with his initials to validate them. Only one copy of the British Guiana "one-cent" exists; it is the most valuable stamp in the world. Its value cannot be estimated, as for years it has not come up for sale. Collectors have regarded it as the gem of the celebrated Ferrari stamp collection, part of which was sold at auction in Paris in the summer of 1921. The owner of this five-million-dollar collection died during the war.

Philippe Ferrari, Italian by birth, Austrian by adoption, was a fanatic with but one passion—collecting stamps. He once advertised that he would marry any woman that would bring him a one-penny Mauritius of the year 1847. The sight of a coveted stamp sent him into a delirium of excitement and joy. He was called a "philatelic miser," hoarding stamps as others hoard gold or jewels. He spent an enormous fortune throughout a period of fifty years in assembling examples of rare issues. Stamp-lovers were never permitted to see his treasure. The extent of it was a mystery. Consequently there was great interest shown in the auction sale held by the French Government, which had sequestrated the collection on the premises of the Austrian embassy in Paris after war was declared. It had been Ferrari's intention to bequeath his stamps to the famous Post Office Museum in Berlin. Many years before he died, his mother had given her palatial Paris home to the Austrian Government, and he had occupied a small pavilion on the grounds.

The Millbury "Five-Cent"

When the sale was held last June, a record price in the history

of stamp collecting was paid by Monsieur Burrus, a rich French tobacco manufacturer, for a pair of two-cent British Guiana stamps of 1850, black on rose, used on an entire envelope. These two finest examples known of the issue brought $16,212, and $3,000 was paid as tax to the Government. There are only eleven of this denomination, so far as anyone knows. A stamp is precious in the eyes of collectors in proportion to its scarcity. Face value, printing, paper, color, watermark, or oddity of design are secondary considerations.

The Most Valuable Stamp
Issued in British Guiana, 1856, canceled in handwriting by postmaster

The choicest single copy put up at the Ferrari auction was a two-cent black on blue paper, printed at Honolulu in 1851. Over $12,000, plus the Government tax of 17½ per cent, was paid for this stamp. This was the highest price ever paid for a single copy. The issue was used originally for franking American missionaries' letters to the United States. Most of the twelve existing copies are owned by Henry Crocker of San Francisco.

The heaviest buyer at the Paris sale was Burrus, the millionaire tobacconist, who paid over 600,000 francs for "Ferrarities." A collection of Uruguay stamps that excited lively bidding brought nearly $10,000. Altogether, a total of over a million francs was spent by more than thirty bidders for the 172 items put up at auction. It is presumed that professional bidders acted as agents for amateur collectors in America and elsewhere.

The Ferrari auction, the first of several that will take place during the coming two years, is described as "unique, dramatic, and picturesque." The Paris correspondent of *Stamp Collecting*, a British weekly, says of this sensational sale: "The unexpected is always happening. But nothing was so unexpected in 1914 as the possibility of the world's greatest stamp collection coming on the market. The philatelic Count of Monte Cristo, with his *cache* of wondrous stampic gems, more than he and his two secretaries could count, will soon be nothing more than a memory. Ferrari has gone to his last rest, and the great collection on which he spent half a century in years and half a million in sterling will soon be scattered among the collections of the old and new world.

"It is always a rather pathetic matter, the breaking up of a collection which has taken many years of patient labor and research to bring together. Many folk would almost rather that the collection had gone to the Berlin Postal Museum, as Ferrari intended, instead of being dispersed. But in this particular case I see something of retribution. Ferrari had great possessions. He had wealth and enthusiasm. But the enthusiasm was of the wrong sort. His wealth gained him the advantage over hundreds of more generous-minded and more able philatelists. He collected stamps for himself and himself alone. So, as Ferrari proposed in his lifetime that his collection should remain forever intact, fate has disposed that it shall be dispersed to the four winds."

Soon after postage stamps became the fashion abroad, postmasters of local offices in the United States were authorized to issue their own adhesive labels. The one existing copy of the Millbury, Massachusetts, "five-cent" is a coveted specimen of early United States issues. The Baltimore and St. Louis local stamps also stand near the top in the list of valuable stamps.

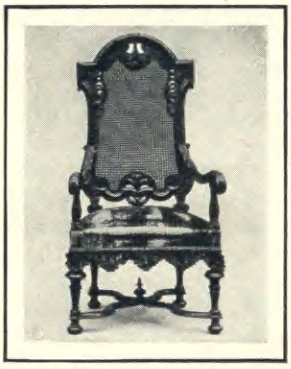
The celebrated collection owned by King George V of England is confined to postal issues of the British Empire. Its value is surpassed by some American collections, among them that of Mrs. Henry Duveen, who recently inherited from her husband stamps worth $1,250,000. Highly valued among "error" stamps are the Cape of Good Hope issue of 1861, and the British Transvaal, a penny stamp on which the name was spelled "Transvral." This error occurred once in every sheet of eighty stamps. The misspelled copy is worth thousands of times more than the perfect specimens on the same sheet.

Richard Dean.

"Hawaiian Blue," 1851

Mauritius, 1847

SITTING THROUGH



William and Mary Chair

PROBABLY no article in the household has gone through so many changes as the chair. In the days of Queen Elizabeth of England, common folk were still sitting on settles, benches, forms, and stools. For Sir Walter Raleigh and other gentry, however, chairs had been introduced, the curule—a wooden affair with much turned spindle work, adapted from Italy—and the high-backed, uncomfortable wainscot chair. The latter was of heavy oak, had a flat wooden seat, sometimes supplied with a cushion, and a solid wooden back carved and paneled. Shakespeare doubtless wrote his plays seated in a wainscot chair.

Carolean Chair

Oliver Cromwell was a simple and severe man. The chairs of his period resemble him. But when the throne of England was restored to Charles II in 1660, the new king brought from France a taste for luxury that is reflected in the chairs of his time. They were lighter and more graceful. Elaborate pierced carving and much scroll work became the fashion. Maple, oak, and beech were used, but walnut chiefly. The typical chairs had cane or upholstered seats, carved underbraces, high, narrow backs with carved cresting. Usually the chair back was a narrow panel of cane or upholstery in an elaborately carved frame. There were two main types, the Flemish, with scroll feet, and the Spanish, with square grooved feet.

When James II abdicated in 1689, leaving the throne to Queen Mary and her consort, the Dutch William, chairs became more domestic and simple. They were strongly influenced by French and Dutch fashions. William imported Dutch workmen who in turn had been influenced by the French Huguenot refugees that took the styles of Louis XIV into the Low Countries when they fled from religious persecution in France. Walnut was still the favorite wood, with much turned work, some carving and inlay. Chairs were more comfortable, the backs were tilted and often shaped to fit the curves of the body.

The reign of Queen Anne, at the beginning of the eighteenth century, may be said to mark the dividing line between ancient and modern furniture. The Dutch elements had been absorbed and a genuine English style produced. There was less carving and more simplicity. Curves were the vogue. The cabriole leg with the round Dutch foot was introduced. Walnut continued to be popular, often veneered. There was a variety of chairs, but the fiddle-back was typical. It had turned legs and Spanish feet; later, cabriole legs without underbracing. Carving was simple, backs high, narrow, and curved to the body. In the middle of the back was a solid splat, shaped like a vase, lyre, or fiddle. Seats were broad, flat, upholstered, or of rush.

Queen Bess Chair

The master cabinet makers of England were developed in the Georgian period. Thomas Chippendale was the first of them. He discovered the possibilities of mahogany, and made it the king of cabinet woods. From 1735 to 1765 he was the leader in designing furniture. He bor-

Queen Anne Chair

THE CENTURIES

rowed from the French of Louis XV, the Dutch, Chinese, and the Gothic. Occasionally he mixed these elements badly, but most of his work is marked by a fine feeling for design. He was a master carver. His typical chair back was a moderately carved frame, rectangular in outline, with a bow-shaped top and, usually, a beautifully pierced splat. He designed the ladder-back chair, with four or five bow-shaped cross-pieces and backs with Chinese or Gothic fretwork. The seats of his chairs were broad and the legs either cabriole with ball and claw feet or straight and square.

Little is known of George Heppelwhite. His designs, ascendant between 1770 and 1790, were of rare beauty. Present-day designers probably owe more to him than to any other. A classic feeling and freedom from eccentricity marked his work. He used mahogany with inlays of lighter wood. His carving was restrained. He employed generally a shield-shaped, heart-shaped, or oval back, and square straight legs, often terminating in spade feet. The seats were generally upholstered with colored or figured haircloth held in place with brass-headed nails.

Chippendale

Heppelwhite

Thomas Sheraton, the last of the great Georgians, whose work was paramount between 1790 and 1810, was an artist and genius, but a poor business man. His best work has never been excelled. At the end of his career, however, he designed grotesque furniture and died poor and disappointed. He designed in chaste lines and delicate proportions. He was a master of the use of wood sand color, using mahogany and satinwood chiefly. He made some round chair backs, but his typical chair back was rectangular with the top line broken, framing various forms of straight-line work and simple curves. His carving was in low relief and classic detail. The legs of Sheraton chairs were usually round, reeded, and tapering.

Sheraton

An American Chair

America has had one designer whose work entitles him to a place with the great furniture makers. He was Duncan Phyfe, who came to New York from Scotland in 1784 and was well established by 1795 in Fulton Street where the Hudson Terminal building now stands. He did his best work between this year and 1820. Up to the beginning of the nineteenth century, English styles prevailed in America. Then came Phyfe and created a style based upon Adam and Sheraton, modified by the French Empire influence. His furniture was executed in the best West Indian mahogany. His chairs show the highest degree of workmanship, design, and finish. He had a highly developed feeling for line and proportion, was master of the curve, and displayed rare taste and skill in carving. In his chair backs he often employed the lyre form, while others had two horizontal pieces, finely carved and modeled to fit the back. The legs were usually shaped in a concave curve with an outward sweep of infinite grace. After 1830 he used rosewood and produced a degenerate style which he himself called "butcher furniture."

A KING ENTHRONED 350 YEARS

Emperor Frederick Barbarossa Paying Homage to the Dead Charlemagne

CHARLES THE GREAT, called Charlemagne—which is a combination of two Latin words, Carolus and Magnus, meaning "Charles" and "Great"—was king of the Franks, and, by conquest, king of all the nations of Western and Central Europe, founder and ruler of what was known as the "Holy Roman Empire." He lived from about 742 to 814 A. D.

Charlemagne was not only one of the greatest rulers of history, but an altogether unique character. He did things in his own way; the things that he did were sometimes strange; and the way that he did them was often wonderful. The seat of his vast empire was at Aix-la-Chapelle. The Germans call this city in the Rhine Province of Prussia, Aachen. Charlemagne built there a superb palace for himself, in which he held court with a pomp, dignity, and splendor that impressed and awed the whole civilized world. He created a great revival of science, literature, and art. He gathered together at his court the most cultivated scholars of the age, the most distinguished poets of the day, and the most celebrated artists—and in this brilliant circle Charlemagne was not only the dominating figure but the intelligent and sympathetic comrade, friend, and patron of genius. He built at Aix-la-Chapelle a fine chapel, and under it an impressive tomb for himself. By his order his body was placed there in a sitting position in the year of his death, 814. It was a most imposing figure, for Charlemagne was a man of majestic stature, prodigious strength, and noble and commanding presence.

A chronicler tells us that nearly 200 years after, in 1001, the Emperor Otho III had the vault opened. The body of the great emperor was found in a remarkable state of preservation, seated on a marble throne, dressed in imperial robes, with his crown on his head, his sword by his side, the Gospels lying open on his lap, and his scepter in his hand.

In the year 1165 the Emperor Frederick Barbarossa had the vault again opened, and paid homage at the tomb. In 1215, Frederick II took the remains from the vault, and put them in a casket of gold and silver, in which they are still kept in the treasury of the cathedral at Aix-la-Chapelle.

The marble throne on which the dead emperor sat for three hundred and fifty years is still to be seen in the cathedral. It was used as a throne at the coronation of the German emperors until 1558, after which the emperors were crowned at Frankfort. The crown and other relics found with the body are preserved in Vienna.

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INSECTS THAT ARE EATEN

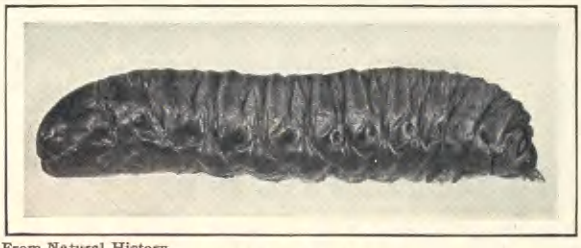
IF THE experiments of distinguished scientists are prophetic, some of us may yet follow the example of the little boy whom nobody loved and who went out into the garden to eat worms.

Dr. J. M. Aldrich, of the National Museum, has sampled the worm that is on the daily menu of the Mono Lake Indians in California, and has written a treatise on the subject.

"They taste like linseed oil," Dr. Aldrich says. "When properly prepared they look something like a date, but the odor is slightly more pungent."

Dr. Aldrich is not the only scientist to have tasted worms; Professor Shaw of Colorado ate a handful fried in butter to the edification of his high-school botany class.

The experiments of these men would cause neither surprise nor repugnance in many sections of the world, for insects have been eaten by man for centuries, especially in the East, where they are not a delicacy but a staple. These are generally eaten in the caterpillar stage.



From Natural History

An African Delicacy

The "grub" of the giant beetle, which, roasted on the end of a stick, is eaten in the Belgian Congo. It is esteemed for its size and rare flavor, sometimes being five and one-half inches long. Mr. Herbert Lang, leader of the American Museum Congo Expedition, brought back this specimen with him

Compared with the pig, lobster, and duck, they are clean feeders, living as they do on vegetation only. Some of them are rendered unpalatable by the strong herbs they feed on, but until they reach the butterfly stage they will not touch carrion.

California Indians esteemed grasshoppers, and John Muir tells about the Diggers who ate clay that contained grubs.

Ants are eaten in Africa. In general they have an acid flavor. The Dayaks of Borneo mix them with rice, and in Queensland, according to Sayville Kent, the naturalist, green ants are mashed in water to make a drink like lemonade, which is esteemed by the natives and some Europeans.

Fat-bodied moths are eaten by more or less civilized men. The "bogong" of Australia is eaten; not by whites, however. The name is not descriptive; it comes from the mountains in which they are found. They plunder beehives for food. The white ensign moths of that country, attracted by searchlights, descend in myriads upon ships and make even guns and engines unworkable by wedging themselves into every crevice. Decks are converted into skating rinks by the trampled dead.

The locust, however, is preeminently the insect food. Izaak Walton, the most famous fisherman, says that it was an article of faith among the Hebrews that lice swallowed alive were a certain antidote for jaundice. In Leviticus, the locust and the grasshopper are exempted from the taboo on every flying and creeping thing "that goeth on all fours." John the Baptist was fed on "locusts and wild honey."

The Arab, who, like the strict Hebrew, will not eat shell fish, has always eaten locusts. They used to be poured into Fez by the carload. The city of Mecca is said to have solved the bread problem during a famine by grinding up locusts and eking out the wheat with this "flour." Usually they are not eaten raw. This is a favorite recipe for cooking them: "Boil a good while in water, having stripped off the legs and wings; then stew them in butter." Locust eggs are eaten salted in India; in other parts of the East they are used in soup, and in Morocco they are eaten by the plateful.

Scientific men of the past have eaten insects and found them palatable. De La Lande, a celebrated French astronomer, enjoyed fresh-caught caterpillars and spiders. He declared that the spider, while not a clean feeder, had a nutty flavor and the caterpillar resembled an apricot or plum. Frogs and snails, fed on lettuce, are eaten without comment on the Continent, and all over the world people eat cheese mites by the million.

Male butterflies of some species give off an odor like lemon or lavender and the male of the common ghost moth emits an aroma identical with pineapple.

Three Girls Whose Accomplishments Amazed Me

ONE was twelve and the poise with which she talked to me, her splendid diction, the many really interesting things she discussed, made me marvel. Her sisters were equally impressive and appealing.

"Mrs. S—", said I, "your daughters fairly amaze me. I doubt if many girls twice their age could talk with the same understanding upon the great number of subjects they seem to know so much about. It must have cost you many hours of infinite patience to develop them so well."

"Do you know", she said, "I hardly helped at all. I doubt if I could had I wished to. I grew out of girlhood with few accomplishments. One day I was suddenly aroused by the discovery that my daughters were drifting likewise.

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THE OPEN LETTER

A million dollars is not the large sum of money that it used to be. The millionaire of the twentieth century is a far richer man than the millionaire of the day when the word was coined. Then, it meant a man whose worldly possessions were worth a million or more—now it may mean a man who enjoys *an annual income* of a million. To-day, "billions," instead of "millions," is the word used in talking about affairs that call for "big money." The meaning of this as far as individuals are concerned is reflected in the statistics relating to the Federal Income Tax issued by the Treasury Department. This shows that we, the people of the United States, have dwelling amongst us no less than 6,000 millionaires! And these are simply the millionaires that have been definitely apprehended, checked up, and marked for identification. At times, great financial fluctuations precipitate other individuals suddenly and abruptly into the millionaire class. Some of these flash through the field of golden vision, and then pass down and out into obscurity; others hold fast quietly and firmly to their possessions and are alluded to in a vague way as "unknown millionaires." Statistics, however, show us that we have between 6,000 and 7,000 accredited and established millionaires.

★ ★ ★

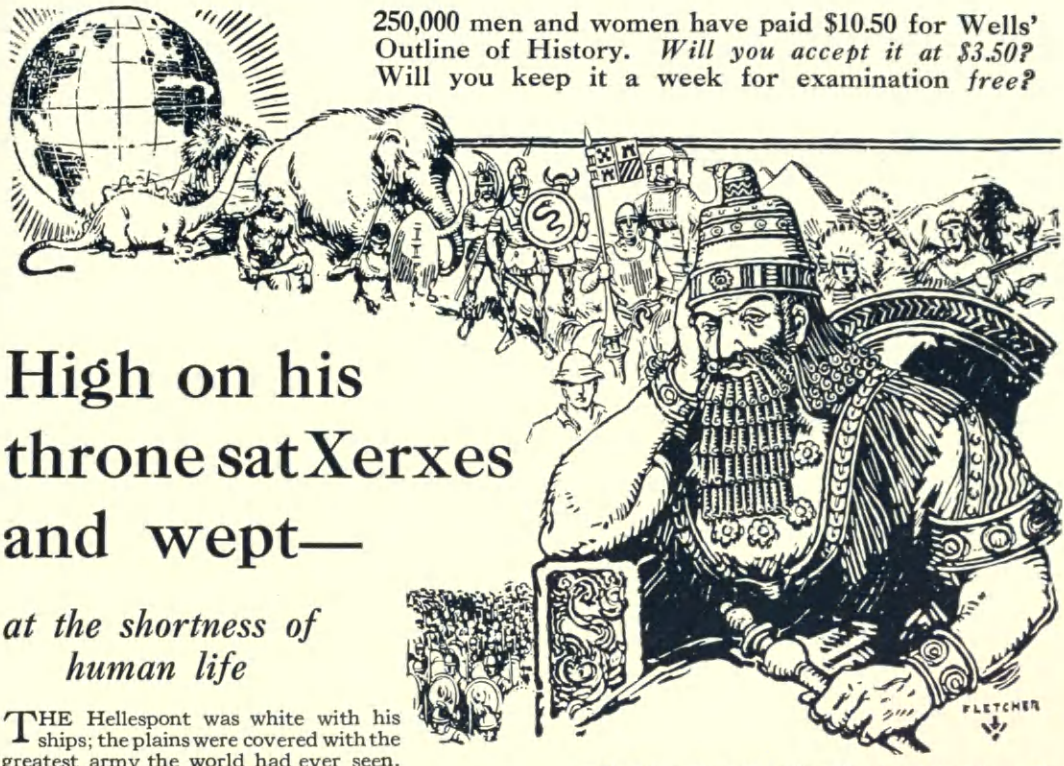
In the higher regions of wealth we find several who are not merely in possession of millions, but who actually draw *annual incomes* of a million or more. Reckoning on the same basis as that on which we figure millionaires—that is, on the basis of the income yielded by their wealth—we may fairly call men having an annual income of a million or more "billionaires." We use the term, though, with hesitancy, for it was not long ago that Mr. John D. Rockefeller was referred to as a "billionaire," and the statement was definitely denied by Mr. John D. Rockefeller, Jr. But it seems to us that wealth yielding an *annual income* of several millions might almost bespeak a "billionaire"—and we find in the Federal Income Report a number of American citizens who receive annual incomes ranging from one to five millions, and more.

It is not within the province of The Mentor to discuss the manner in which great fortunes have been acquired. We leave that to writers on political economy and finance. What we dwell on here—and with satisfaction—is the contrast to be noted in the methods of *disposition* of wealth in olden times and to-day. This contrast begets a feeling of optimism, and a conviction that the world, despite its frailties, is moving toward a higher goal—that mankind is coming to look upon great wealth as an important trust, instead of a means to selfish luxury and despotic power. Instead of putting wealth into pearls to drink, as Cleopatra did, or, like Louis XIV, expending fabulous sums on the extravagance of a Versailles palace, many of the conspicuous multimillionaires of our time have been directing their fortunes to the betterment of human conditions and the recognition of eminent achievement. There is the Nobel Bequest for the reward of intellectual and humanitarian service. Carnegie, preaching that it was a disgrace to die rich, substantially lived up to his preachment. During the present year there passed away a man distinguished in the world of finance—one who was known as a prince among men; who, in the highest sense, regarded the possession of wealth as a responsible stewardship; and who devoted a great part of his life and fortune to the upbuilding of his university, and to the generous support of worthy human causes. John D. Rockefeller has expended vast sums in endowments to education and special research. The Russell Sage Foundation was established for the fine purpose of expending millions judiciously in the improvement of social and living conditions in the United States. The country is dotted with universities, libraries, art galleries, and other institutions that bear testimony to the philanthropic spirit of our rich men and women. A new kind of organization has developed out of the conditions of modern wealth: a private corporation, trust, or foundation devoted exclusively to the work of giving away a part of some great fortune.

W. D. Moffat

EDITOR

250,000 men and women have paid $10.50 for Wells' Outline of History. *Will you accept it at $3.50?* Will you keep it a week for examination *free?*



High on his throne sat Xerxes and wept—

at the shortness of human life

THE Hellespont was white with his ships; the plains were covered with the greatest army the world had ever seen.

"Why should you weep?" his uncle asked. "You who have everything?"

"I have reckoned up," said Xerxes, "and it came into my mind to feel pity at the thought how brief was the whole life of man, seeing that of these multitudes not one will be alive when a hundred years have gone by."

(Wells' Outline of History, page 283.)

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MAJOR ANDRÉ'S THREE CAPTORS

I HAVE been much interested in receiving letters requesting a fuller statement in regard to Major André's captors than was possible in the issue of The Mentor for September, 1921. To these letters I have directly replied. For the benefit of other readers it may be well here to indicate briefly some of the evidence in the case.

Paulding, Williams, and Van Wart were instrumental in the discovery of Arnold's treason before that treason had been accomplished. Friends of the American cause naturally rejoiced at escape from the sorest crisis of the Revolution. Washington evidently felt that, inasmuch as unsparing severity was demanded toward André, unusual recognition was due to the three captors. Little or no inquiry at the time was made into the original motives of the men. Washington knew none of the three; and it was not until October 7, 1780, five days after André's execution, that Washington was able even to furnish their names to the president of Congress. With precaution against a possible similar emergency, he thought a generous reward "must prove a powerful incitement to others to imitate their example."

To Lieut. (later General) Joshua King, who had charge of André at Lower (South) Salem, and to Capt. Samuel Bowman, who was constantly with the prisoner during the last twenty-four hours previous to the execution, André stated his belief that the men stopped him with the purpose of robbery, and would have let him proceed if he could have produced money sufficient to suit them. The three captors professed, as was to be expected, that, in the whole affair, their motives had been most patriotic, their conduct most upright. King implicitly and explicitly accepted André's statement, and declared, "The truth is, to the impudence of the men, and not to the patriotism of any one of them, is to be attributed the capture of Major André." The distinguished Maj. Benjamin Tallmadge, who took André from Lower Salem to Tappan, also had his opinion, and at last spoke out.

On January 13, 1817, a petition from Paulding for an increase in pension was discussed in the House of Representatives, and Tallmadge, then a member from Connecticut, opposed the petition. He said he agreed with André that the men's object had been robbery, and that they would have released their prisoner if their demands had been met. He further said that they removed André's boots to look for loot, not to search for treason; and that it was for mercenary reasons they brought in the prisoner to an American post. They were, he added, men of a suspicious class—men whom he would doubtless have arrested had he chanced upon them. Paulding's petition was thereupon rejected by a large majority.

One of the Pines, prominent Tories, claimed that Van Wart was, by his own statement, really a Tory. Winthrop Sargent, André's chief biographer, says that twice, during the summer of 1780, Van Wart and Williams had seized, without authority, persons and cattle, and that the American civil authorities had been compelled to interfere. In Sargent's words, the men "had agreed to waylay the road in quest of spoil. The ravages of war had deprived them of all profitable and peaceful employment, and by their own account they were in hopes of wresting from some of the returning confederates of the Cow-boys, who had just forayed the country, a part of their ill-gotten gains. They acted under no commission nor were detached from either the continental or militia organizations." "That they thought him a spy when they searched him," further declares Sargent, "is more than I believe." William Abbatt, in his annotated edition of Sargent's work, expresses no dissent from Sargent.

Opportunity is now offered to correct in the printed text of the "Famous Spies" article several misprints that unavoidably crept in, owing to the fact that it was found necessary to condense the article just before going to press. On page 5, "Huntingdon" should, of course, read "Huntington" and "Rutger's" should be "Rutgers';" on page 9, "$200 a month" should be "$200 a year." The Munsons (page 4) lived in New Haven. It was a stone shaft (page 9) that was placed over the site of André's grave at Tappan. The British military critics who approved André's sentence did not constitute a formal board. A possible ambiguity may be removed by pointing out that the Barnum referred to on page 10 was H. K. Barnum, the author.

It is encouraging to note that American history as presented in The Mentor enlists the interest of so many readers.

George S. Bryan.

The Only Baby In India!

YOU wouldn't think, in an Indian city swarming with people and knee-deep in babies, that one extra infant would count! Yet Taj and her husband, Fagal Alahi, thought that Heaven shone only for them when the American doctor at the hospital told them that they were going to have a child, after eighteen long years of waiting. The whole town was agog. When Taj's baby finally arrived she called it "The Gift of God."

In this Indian city where after nightfall the roofs are littered with sleeping babies—doorways filled with them—whitewashed rooms crowded with them—Fagal would keep his vigil all night beside this one extra youngster, just "watching the baby breathe."

Here is an exquisite story, showing that no matter how many babies there are in the world, it is only your own that counts. Margaret Wilson, the author, lived in this very hospital in India where "The Gift of God" was born. In the December

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Hollanders, Malays, Javanese, Chinese, Arabs and a sprinkling of Americans and Englishmen are reaping their fortunes in Java—the most beautiful island in the world. The Malays are the chauffeurs of Java and form a newly arisen class demanding utmost respect from their fellows. In his pride, a chauffeur often keeps a flunky, who rides along on the fender.

The Rise and Fall of Yuan Shih-Kai *By Paul S. Reinsch*
The man who tried to be Emperor of China! Former Minister Reinsch continues his reminiscences of Chinese life and diplomacy as seen from the American Legation, in this article which gives a remarkable picture of the most remarkable Chinese of the last decade.

Translating Chinese Poetry.....*By Witter Bynner*
Mr. Bynner, one of America's foremost poets who has traveled and studied in China, gives us the very spirit of the old Chinese poets whom he has learned to love.

A Boy in Persia.....*By Youel B. Mirza*
A story of Persian village life, as delicately woven as a Persian rug. The watchman, making his rounds, singing: "Everything is well. Be not afraid." Grandfather Mirza—whose years were beyond computing. The Kurds who attacked the village. The blind singer who could sing for three consecutive days without repeating a single song. The Persian meadows full of marigolds!

Somebody—Nothing..*Translated by Michio Itow and Louis V. Ledoux*
Do you remember "The Lady or the Tiger"? If you are interested in baffling endings, you will be intrigued by this charming Japanese farce.

In the Wake of the Friars.....*By Hazel C. Taylor*
Legends, history and drama hover around the old churches of Manila. Within their walls, soldier and priest rubbed elbows, for not only were the churches places of worship but refuges from hostile tribes and the elements. The very essence of the old Spanish days in "our Islands" seems to have been distilled within these places.

My Uncle Ter-Barsegh.....*By Armen Ohanian*
All Paris is talking of Armen Ohanian, the beautiful Armenian dancer who is making an artistic success this winter in the capitals of Europe. This Christmas story is a memory of her uncle, the patriarch of a little group of Christians in Zergueran, who tells his simple flock his naive version of the story of Christ.

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From a painting by Isidore Alexandre Pils

Rouget de Lisle Singing The Marseillaise for the First Time

"La Marseillaise" was composed by Captain de Lisle, a young artillery officer, while quartered at Strasbourg in 1792. He wrote it one winter night, and sang it the next morning to a group of friends, at the home of Baron Dietrich, mayor of the city. It stirred a furor of patriotism whenever it was sung and played. The insurgents of the French Revolution, assembled at Marseilles, marched on Paris to its strains, and chanted it during the attack on the Tuileries. The ardor of its words and tune has inspired armies and inflamed poets. "What a song!" exclaimed Heine, the famous poet. "It thrills me with the glowing star of enthusiasm and swift desire"

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MUSIC AND LIFE

By FRITZ KREISLER

"All one's life is music, if one touches the notes rightly and in time."—Ruskin.

LIFE begins and ends with music. It envelopes and permeates the world we live in. Land, water, and sky are full of elemental music of many kinds and degrees of intensity. The wind sings through the responsive leaves, and plays on the harp-strings of the waving reeds by the rivers; birds pour forth their lyric tunes to charm the waking morn; and the ocean waves swell in rhythmic chorus as if at the command of a master conductor.

Fritz Kreisler

The potency of music has been acknowledged in all ages and by all races. And it was so from the beginning of time. It is said that long, long ago Orpheus charmed all things animate and inanimate with the strains of his lyre. He even went down to Pluto's domain, Hades, and coaxed back the soul of his dead and lost love Eurydice* with his music. And everyone knows of the Sirens who bewitched sailors with their songs in the Grecian Isles, and the Lorelei maiden on the rock above the Rhine.

GOOD AND BAD MUSIC

This suggests the thought, often stated, that good music ennobles and bad music degrades. It seems clear to me, however, that there is only one kind of music, and that is *good* music. When music can be called bad, it ceases to be music. It simply becomes rhythmic noise. I do not think that music, in itself, produces good or bad effects, but rather that it enhances and intensifies existing ideas and instincts, good or bad. To a man in love, music may deepen the feeling of romance; a man suffering from melan-

* Pronounced you-rid-de-see.

cholia may have his sorrows dyed a shade deeper; a warrior may have a heightened feeling of war fever. In this connection music may be compared to *hasheesh*. That powerful drug produces good or bad dreams in keeping with the mental condition and environment of the drug-taker. In a room furnished in good taste, he dreams of things beautiful, but in ghastly surroundings he dreams frightful dreams. That alluring composition, *Humoresque*, to a religious man may mean devotional esctasy; to the frivolous, a sensuous dance. I have even been told that some highway robbers once were heard whistling it before they started on a daring escapade.

From a painting by G. F. Watts

Orpheus and Eurydice

Orpheus, who had the power to charm all things with his music, descended into Hades and by the magic of his lyre drew the spirit of his love, Eurydice, from Pluto's shades—but lost her again when he looked back upon her in the light of day

MUSIC IS RELATIVE

I do not think that there is such a thing as *absolute* religious or sacred music. What is true of other things in life is true of music. It is relative. What is true in art to-day may be deemed quite untrue by the next generation. Take, for example, the musical consonance and discord once recognized as essential elements in music. Modern composers and musicians do not recognize the old order of things. The Gregorian chant has been associated in Christian nations with religion for hundreds of years, so it invokes within us religious feeling. In a non-Christian land the same chant might rouse martial sentiment, if it had been used there for that purpose *traditionally*. Play the Gregorian chant to an Australian bushman and it may not affect him devotionally at all—but a certain crude melody of his own will; at the same time, his wild music may inspire feelings of a quite different nature in others in a different environment.

Painting by J. M. Swan "Wainamoinen"

According to an old Norse legend, fish rose to the call of the plaintive pipe

The same is true of the music of different musical instruments. The horn has been associated with the chase. When we think of the chase we instinctively think of the horn. The guitar is associated with romance—a gondola under the Rialto in Venice, or a young man under a window in Seville. Nowadays, we associate war with trumpet and

From a mural painting by E. H. Blashfield

"Music"

drum—the instruments of fire and fury. But in ancient Greece the bards were wont to lash the country into feverish martial activities by singing and playing on the lyre. The Gaelic bards did the same. Now, the lyre is to us an instrument of tender tones and romantic feeling.

During the exciting days of the French Revolution the singing of the Marseillaise was thought more dangerous by those in power than incendiary speeches or weapons of war. It inspired people to make sacrifices, it roused them to fight and to die fighting. I am certain that, in a country that knows nothing about the French Revolution, or of this great song of France, the Marseillaise could be effectively used for religious revival.

Art, then, is influenced by environment, education, and association of ideas. Art, like love, is a state of mind and heart, and the art of music more so than other arts. The arts of poetry, painting, and sculpture have tangible forms. But music is formless—it is all feeling. For that reason it is the more dynamic, and produces a deeper emotional effect.

MUSIC HELPS AND HEALS

A beneficial act, like healing, is quite often accomplished by the art of music. The world is destined to hear more and more of this practical side of music. I shall not be surprised if a book on musical therapeutics, written by a scientist, shall have, before long, a place on the shelves of the medical libraries of the world. In the ancient scriptures of the Hindus, the Christians, the Egyptians, and the Chinese, there are references to the healing power of music. Thus we read in the Bible: "When the evil spirit from God was upon Saul, then David took an harp, and played with his hand. So Saul was refreshed, and was well, and the evil spirit departed from him."

My father was a physician, and I studied medicine for about two years —so I know a little about medical science. I do not think that it is unscientific to say that, in certain instances, music can be effectively used

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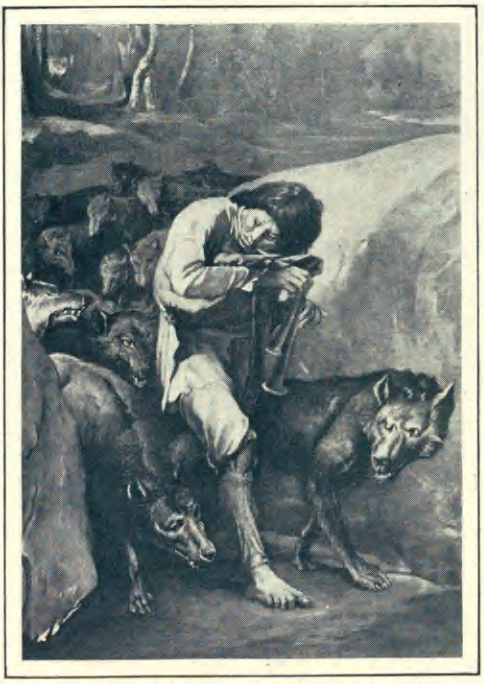
Snake Charmers of India

Lured by the whining melody of the *poongi*, poisonous serpents rear their heads and sway in responsive rhythm

as a healing agency. Scientists have just begun to investigate this matter. Healing is largely a normal adjustment of the maladjusted molecules of the body. Recently a case was brought to my notice. A young lady was sick with high fever in her home on a ranch in one of the western states of the Union. The doctor's home was far away, and he could not be summoned readily. A friend asked the mother to give her daughter a "music cure." A certain record was played on the phonograph a few times. The young lady's temperature came down, and, I am informed, she was soon on her way to recovery. A case has been cited recently of a young woman, suffering from sleeping sickness, who was brought to consciousness and health through the ministration of music. She was a Russian, and when she recovered she declared that what recalled her from her long siege of sleeping was the violin playing Russian melodies.



From a painting by John La Farge. In St. Louis Art Museum

The Wolf Charmer

The effect of music not only upon the ill, but also upon the insane, has been noted and considered by physicians. For my own part, I believe in the soothing, comforting, and healing effect of music. We all know how thought affects the human body. An embarrassing remark causes a rush of blood to a woman's face, and she blushes. If you look at something sour your mouth waters, or if at something tragic, tears rise in your eyes. Think of your absent beloved, and your body and mind ache with the bitter pangs of separation. Happy thoughts make the body buoyant, and melan-

From a painting by Maxfield Parrish In Buffet of the Palace Hotel, San Francisco

The Pied Piper

The Pied Piper of Hamelin

This picture by the celebrated artist Kaulbach illustrates an old legend which Robert Browning related in verse. The city of Hamelin, in Brunswick, was overrun with rats that "split open kegs of salted sprats, made nests inside men's Sunday hats, and even spoiled the women's chats." When everyone was nearly distracted, there appeared before the city fathers a stranger who agreed, for a thousand guilders, to lure the rats away by piping a magical air. As he played, the rats followed down to the river, and were drowned. But the mayor refused to pay the promised sum. Whereupon the stranger again played his wondrous pipe and, this time, lured the children, who followed the music with shouting and laughter, and disappeared into a mountainside, never to return

choly thoughts depress it. If the mind is "low," if the nerves are weak, the power sent to the muscles is diminished. Now every musical note is a living thought current. If electrical waves in air can carry a wireless message over thousands of miles, a musical wave may also find a response in the physical and mental being. The musical waves no doubt act and react on our nervous system. And surely they do adjust or maladjust, disturb or harmonize, the atoms and *ions* of our natures.

From a painting by Wenzel Tornoe

Beethoven Playing to the Blind Girl

I found my musical ear of value in war service. I soon got accustomed to the sound of deadly missiles—in fact, I quickly began to make observations of their peculiarities. My ear, accustomed to differentiate sounds of all kinds, had noted a remarkable discrepancy in the whine produced by different shells as they passed overhead, some sounding shrill, with a rising cadence, and others rather dull, with a falling cadence. Every shell describes in its course a parabolic line, with the first half of the curve ascending, and the second one descending. Apparently, in the first half of its curve, while ascending, the shell produced a dull whine, accompanied by a falling cadence, which changed to a rising shrill as soon as the acme was reached, and the curve turned down. I was told that shells sounded different when going up than when coming down, but that this knowledge was not of value for practical purposes. I found that I could, with a trained musical ear, mark the spot where shells reached their acme, and so could give the almost exact range of guns.

From a painting by F. Ulreich

Schubert in His Home

MUSIC AND ANIMALS

Music affects even the animal world. The flute pleases and thrills the horse. The drum and trumpet awaken the spirit in this noble animal so that he plunges headlong on to the battlefield. The Hindu snake charmer

From a painting by H. Schneider
The Boy Mozart and His Sister

plays on his *poongi* flute, and deadly cobras crawl out and weave their sinuous way toward their seductive charmers. Not long ago a musical experiment was tried out at the New York Zoological Park. The animals were tested on the "jazz music" that so many modern human beings seem to fancy. The animals did not like it. The monkeys, in particular, went wild in anguished revolt.

NATIONAL MUSIC

It is passing strange that some would like to nationalize music. Music belongs to no nation. The spell of music is the same whether it is sung and played in America or England, in France or Italy, in India or China, in Russia or South Africa. Music, like art and literature, is universal; it transcends all national boundaries. Rodin belongs just as much to Russia as to France; Shakespeare just as much to Europe and America as to England; Kalidasa just as much to England as to India; and Brahms just as much to Paris as to Vienna. As from the mountain top the world below is bereft of all national distinctions, so, viewed from the peak of higher understanding, nationality in art disappears.

It is cultural background, intellectual training, specialization, and execution that make the difference in the appreciation of music. If badly played, even Beethoven's symphonies would be a deadly drag. From my earliest days I have been interested in music, and music is my life; and yet, if I do not like the music of a negro in Darkest Africa, that does not make that music less vital, less real to the African. It is my own fault that I do not appreciate such music. The first time I heard Chinese music I did not like it at all. But later on, when I heard a Chinese scholar sing, the deeper and inner message of Chinese music was revealed to me. To understand music of this sort we must study national background and tradition.

In examining the cubist and futurist

From a painting by Margaret I. Dicksee
Young Handel

arts of to-day, one may fail to understand the meaning of lines and surfaces. One may scorn a picture, and call it grotesque, but to the artist it is real. Adherents to the traditional laws of pictorial art scoff at him, but he does not care. He looks at the picture he has produced from the angle of a highly accentuated imagination.

The same is true of music. The last movement of Beethoven's Fifth Symphony, played to an untutored listener, may be no more than a crude march, but to one trained in music it is sublime revelation — as though the soul of a mortal had burst through the shell of egotism to stand face to face with the Infinite. When I hear Beethoven's symphonies, I think I know why he became deaf. It seems to me that he must have been so saturated with exalted music feeling that a little more would have devastated him physically. It seems almost as if he *had to become* deaf, to be shut in, in order to gain an intensified hearing of the musical inspiration within him. No sound from outside could help him any more. The sonatas that he wrote while deaf are the very essence of music.

From a painting by W. A. Breakspeare

Stradella

There is a story that the Italian composer Stradella was pursued by assassins, hired to avenge his elopement with a lovely maiden. But when they heard him play upon the organ, the divine message of the music so affected them that they crept away and left him unharmed with his beloved

Here it may be mentioned, by the way, that with the growing complexity of music, really great compositions are growing less in number. Haydn wrote one hundred and fifty symphonies, Mozart over forty, Beethoven nine, Tschaikovsky six, Schumann only four, and Brahms four.

The international animosities of the past few years have retarded the progress of music in the world. But in the task of reconstruction, of the regeneration of the human race, music will play a prominent part. I have, however, somewhat modified my views in this matter. Before the war I was enough of a dreamer to exaggerate the importance of music for the elevation of society. But I know Europe to-day, and I have seen things with my own eyes. Now I hold that when men, women, and children actually die of starvation, or eke out an existence of lingering death, music, even the very best of it, cannot help them! The artist himself cannot sing or play on an empty stomach. Give the hungry musician a slice of bread and a glass of water, if a cup of sugarless

The Music of Love—From a painting by Carl Zevy
"If music be the food of love, play on."—Shakespeare

The Interval—From a painting by Seymour Lucas
"It is in learning music that many youthful hearts learn to love."—Ricard

coffee is too much to expect—then his spirits will rise and he will produce good music. Give the hungry lover of music a bite of food—then he will enjoy music and smile. Music glorifies life but cannot preserve it. Music is the dome, a very beautiful dome, but not the foundation of the edifice of humanity.

From a painting by Wulff

Beethoven Listening to the Storm

As in music some notes mingle, so in life some vibrations are in accord. The underlying principle of this accord in life may be called love. Music and love are like twin sisters. Like flames of fire they both burn into the very core of our being. Music has often been defined as "the language of emotions," and the profoundest of all emotions is love. The dominant note of most of the beautiful songs is love. Most of the grand operas strive to unfold this glowing principle in life. Love invigorates art. One who cannot love greatly and unselfishly cannot accomplish great things in life. "Music," says von Weber, "is the purest, most ethereal language of passion." "I can grasp the spirit of music," says Wagner, "in no other manner than in love."

Most of the great musicians have been great lovers, for music creates love; it deepens and sanctifies love. Love has been the rudder to guide the ship of their lives.

In spite of all human thoughts and theories, life is still a mystery, love is a mystery, music is a mystery. No one can really define them. It is a supremely happy thing, nevertheless, that we can realize love and music in life. Both music and love blend with life as does color in a rainbow.

From a painting by Balestrieri

Beethoven Sonata

MOTHER AND CHILD IN MODERN ART

"IN THE GARDEN"

The models in this serene and harmonious group were the wife and children of the artist, George DeForest Brush. It hangs in the Metropolitan Museum of Art, New York

MOTHER AND CHILD IN MODERN ART

By WILLIAM STARKWEATHER

SINCE art began there has been no subject more popular with both artists and public than that of a mother and child. The old masters, serving with brush and chisel a Church that was a great patron of the arts, naturally turned to the religious interpretation of the motive. They gave us that wonderful series of pictures of the Madonna and Child that we treasure today in hundreds of museums and churches. The noble visions that these earlier artists wrought have ever since haunted the hearts and minds of humanity. Who that has seen the Sistine Madonna of Raphael, alone in her great room at the Dresden Gallery, can forget the soaring majesty of that canvas; who can forget the gray nervous beauty of the Virgins of El Greco at Toledo or the strange heavy-lidded charm and tenderness of the Madonnas of Botticelli in the Academy at Florence?

Modern art has remained faithful to the mother and child theme; the subject is a favorite one today with painters of all the manifold and somewhat confused schools of our time.

A few contemporary artists follow the traditional religious interpretations of the past, but far more approach the subject with the variety of viewpoint and freedom of thought characteristic of the day. As a result, their paintings have nothing of the stereotyped quality which one sometimes feels in certain of the Madonna pictures. Their very variety makes these modern works an unusually interesting series of human documents, a study of the life, the thought and feeling of our time and of the artists who produced them. For there is nothing more true than that a man in his pictures inevitably paints a portrait of himself. Let an artist paint a cabbage or an old shoe exactly as he wishes and the thoughtful observer can tell you much as to what sort of person the painter may be. It is this truth that makes, to those who have gone far in art, even third and fourth rate work tolerable; though the picture may be halting in execution and deficient in beauty, it still offers interest; there is the man behind the picture to be studied.

The reason for the continued popularity of the mother and child theme is not far to seek. Those artists who, like the great masters of the past, have no fear of expressing sentiment or emotion in their work, find in it the most poignant and touching theme in the world. That courageous artist who today dares tell a story in paint can hang numberless homely and moving incidents upon it. Aside, however, from its emotional appeal, the subject offers qualities that make it attract that large company of modern painters who abhor sentiment in painting and confine themselves strictly to rendering beautifully something that has been beautifully seen. The subject includes, or may easily be

In the Art Institute, Chicago

NEEDLESSLY ANXIOUS

By Ernst Zimmerman

THE KNITTING LESSON
By Jean Francois Millet

made to include, the two most gracious figures that we know, a young mother and a child. The curve of draperies, the encircling gesture of a mother's arms, the droop of her head, the natural grace of children lend themselves easily to art composition. The subject is a quiet and contemplative one, also, which is important, for most of the great art of the world has been quiet and contemplative.

France is the great leader of modern art and it is, therefore, on the somewhat flimsy walls of the Luxembourg Museum at Paris that we find some of the greatest modern paintings of motherhood and childhood. Of all French artists Eugene Carrière is the one who has devoted himself most continuously to this theme. His group "The Family," showing a mother and five children, and his "Maternity" are world

In the City Art Museum, St. Louis

TIRED OUT

By Edward E. Simmons

famous. Carrière painted plain every-day people in their work-a-day clothes. Poverty forced him to use his own wife and children as models, and this probably was the making of him, for he gave us pictures of indescribable charm and intimate tenderness which he could probably never have produced with less familiar models. He reduced his palette principally to black, white and brown, his pictures contain hardly a trace of other colors, and he insisted strongly on the envelopment of his figures in atmosphere. Until his death in 1906 he exaggerated more and more these atmospheric qualities, until at last his figures seem shrouded in clouds of smoke or steam. This caused furious controversies among artists and critics. It is stated that Whistler, standing before one of Carrière's pictures, remarked, "Oh, yes! someone has set fire to the nursery again!" The mothers of Carrière's pictures are troubled, careworn and harassed, their heavily modeled faces, full of pain and suffering, seem to express the anguish of the world. With their ghostly children, they loom specter-like through the

A VISIT TO GRANDFATHER

By B. J. Blommers

THE FRUGAL MEAL

By Josef Israels

In the Art Museum of Worcester, Mass.

A MOTHER
By Alfred Stevens

hazy twilight of the artist's paintings, producing a strange effect of pathos, of mystery and of grave beauty.

Grace and quiet beauty, with wonderful tone and quality, characterize the work of Jean Charles Cazin whose famous Hagar and Ishmael is also in the Luxembourg. In a region of sandy dune and desert at twilight, Cazin has placed the weeping mother whom the young son, with an exquisite gesture, attempts to console. Cazin loved solitude, wide sandy wastes, gentle melancholy views. Such a story as that of Hagar and Ishmael offered a subject after his own heart. He treated the theme humanly with simple sincerity and without blatancy. An artist would note with pleasure the adequate drawing and the skilful spotting of the dark masses of dune grasses and shrubs. So excellent is the artistry in this picture, so true its melancholy poetry that it is a canvas that conquers not only our eye but our heart.

The great Jean François Millet, famous for the beauty, the simple sincerity, the broad humanity with which he painted scenes of French peasant life, bequeathed some charming mother and child pictures to posterity. "The Knitting Lesson" is one good example and another is his "First Steps," a delightful cottage garden scene with a child about to leave its mother's arms and risk a perilous journey down a garden path to the waiting father.

In contrast to the sincerity, naturalism and deep feeling of these works how shallow and artificial today seem the pretty mothers and children of William

In the Luxembourg Museum, Paris

MATERNITY
By Eugene Carrière

In the Metropolitan Museum of Art

MADAME CHARPENTIER AND HER CHILDREN

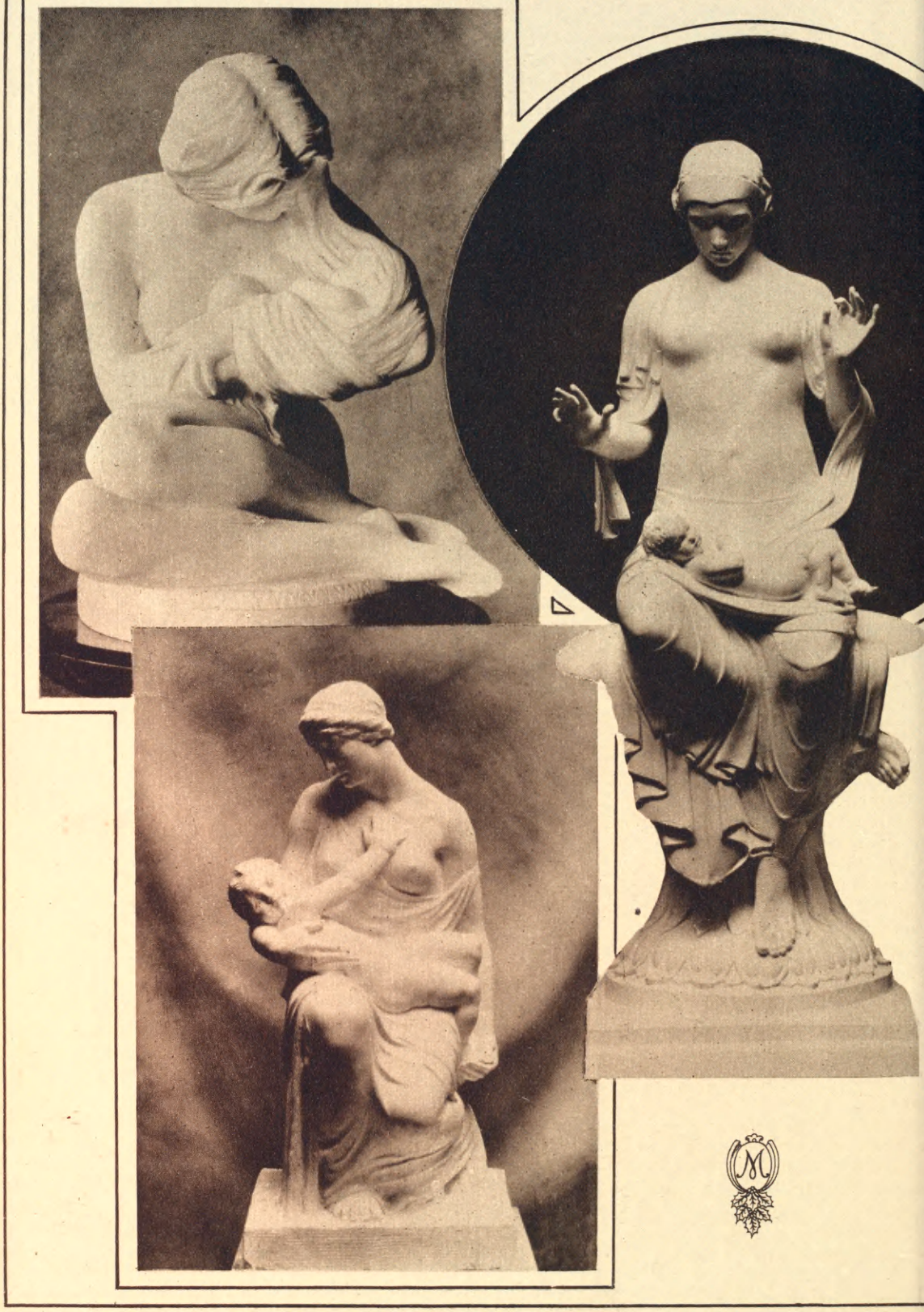
By Auguste Renoir

Bouguereau, more admired forty years ago during what is now known as the era of bad taste, than he is today. The only quality that makes Bouguereau's pictures tolerable to artists are his impeccable draughtsmanship and the ingenuities of his highly academic composition. Both artists and public dislike his sugared softness, and painters especially abhor his waxlike textures. Everything in his pictures, rocks, flesh, water, draperies, Cupid's wings and skies seems made of the same material. Bouguereau enjoyed his rewards during his lifetime. He lived to be eighty and painted continuously and with surprising rapidity, considering the rather high finish of his pictures. He sold practically everything that he painted and is said to have earned more money with his brush than any other artist ever did. The sum has been stated to be eleven million francs. Be that as it may, today his pictures are declining in value, his fame is on the wane, while Millet, who sold his pictures for a few francs and lived for the most part in poverty, has an unassailable rank among the very greatest of modern masters.

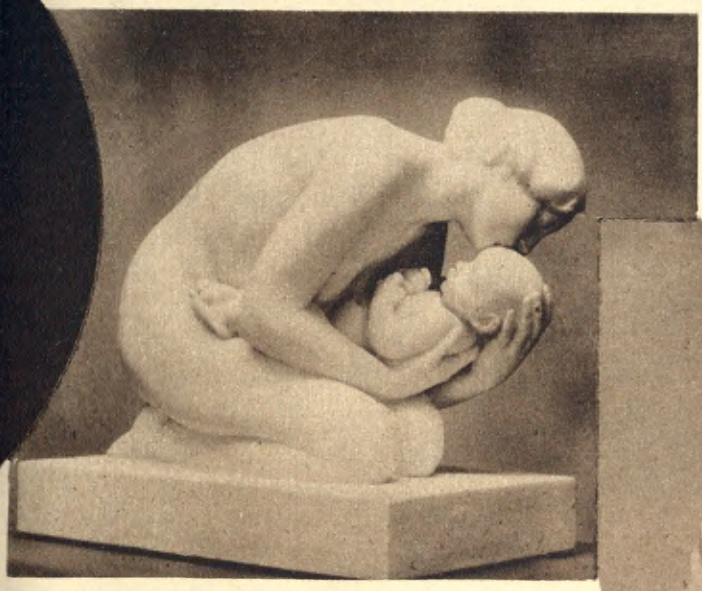
Another celebrated French painter of mothers and children is P. A. J. Dagnan-Bouveret. Often by use of the very faintest suggestion of a halo he gives the mother something of the madonna type. But he keeps very close to the grave clear-eyed dark beauty of the young French woman who has been a favorite type with him. One of his most celebrated pictures of this sort is in the Metropolitan Museum at New York. It is full of Bouveret's tenderness of feeling, quiet poetry and reserve.

The most famous and best of the paintings of Auguste Renoir, with Monet the great leader of the Impressionist school of art, is the beautiful portrait of Madame Charpentier and her children, now in the Metropolitan Museum. This picture made a profound sensation in art when first shown and has been a most important influence ever since. It is generally conceded that there is no better or more subtle flesh painting in modern art than in this canvas.

Mention must be made of Alfred Stevens, born in Belgium, but who passed most of his long life in Paris, where he died



MOTHERHOOD IN SCULPTURE



Five studies of Motherhood, by Bela Pratt (upper left), Marie Apel (lower left), Sherry Fry (center upright) Arthur Lewin-Funcke (upper right), Bessie Potter Vonnoh (panel below)

THESE sculptural treatments of the mother and child theme are not only interesting in themselves, but are interesting through their contrasts. "Motherhood" by Bessie Potter Vonnoh, one of the sculptor's most charming family groups, is realistic, sketchy and intimate in treatment as befits a statuette upon such a theme. The work is typical of all of Mrs. Vonnoh's celebrated statuettes of mothers and children. In contrast to this are the highly formal and composed lines of the statue by Sherry Fry. Here the artist has laid great stress upon rhythm and repetition, upon design in short, searching decorative effect. It is a style suitable for large work as well as for small. Between these two extremes is the charming "Mother" of Arthur Lewin-Funcke from the Metropolitan museum. The lines of the figures have here to some extent been formalized and simplified from nature so that the work is not so realistic as Mrs. Vonnoh's, while it is, however, far more heart-appealing than the highly conventionalized sculpture of Fry and the heroic conception signed by Miss Apel.

In the New York Public Library

THE YOUNG MOTHER

By William Bouguereau

in 1906. We associate the name of Stevens principally with pictures of interiors, with figures typical of the refined world of the 70's and 80's. Today, his canvases seem to us a little stuffy and confused, but Stevens is recognized as one of the most remarkable painters of textures that has ever lived. Often his interest in lacquers and enamels, in bric-a-brac, in the sheen of satins and gleam of mirrors dominated his pictures rather more than any human quality in his models. One feels in his lovely picture, "The Mother," in the Worcester Museum, his interest in details of costume and furniture. He is not far from drowning out his mother and baby in luxurious accessories, but through his delicate taste, just saves himself where another artist might easily have failed to do so.

The greatest of modern Dutch masters, Josef Israels, until his death in 1911, painted a long series of pictures of mothers with children. He generally placed his figures in the semi-obscurity of a small cottage. His deep-bosomed, bare-footed mothers are generally illumined by the light from a single small window marked by a bit of curtain or the flare of a geranium. He is fond of painting his children in the rocking cradles so beloved of our ancestors and now so condemned by baby experts. In these simple pictures Israels rises to great heights of pictorial beauty and poetic feeling.

It is a piquant contrast to turn from such pictures full of

In the Art Institute, Chicago

CRADLE SONG

By Arthur Hacker

HAPPY DAYS

By Elizabeth Nourse

© Detroit Pub. Co.

sentiment to paintings of mothers and children by other artists where the painter has omitted sentiment entirely and confined himself to rendering through beautiful painting something beautifully seen. Two of the most brilliant portrait painters of our day, Giovanni Boldini and John S. Sargent, have also

In the Metropolitan Museum of Art

FAIRY TALES

By J. J. Shannon

THE STORY BOOK
By W. T. Smedley

essayed the mother and child theme. Both of these men approach their problem purely through its exterior and visual aspects. They have little to do with sentiment or tenderness; as a matter of fact, both painters are frequently harsh, and, either consciously or unconsciously, ironic in their treatment of their sitters. Boldini, an Italian living in Paris, has been unfortunate in the subjects he has chosen. He often appears to be mocking the long, feverish, wicked-looking women and anemic children he generally paints. He found, however, one sympathetic subject in the Duchess of Marlborough and her son. The height of the Duchess, the long lines of her figure, suit Boldini's style and he has struck a natural and pleasant note in the boyish way her young son sprawls half across her lap and half across a nearby chair.

There is a great deal to reward study in Mr. Sargent's portrait of Mrs. Carl Meyer and her children. It is a picture to give the thoughtful pause, and attracted enormous attention when shown at Paris in 1900. The lady sits, a blaze of rose satin and pearls at one end of a Louis XVI sofa. One arm outstretched at full length touches the hand of one of two children who peer over the back of the sofa at the great artist who is painting their lovely mother. Under the superficial blaze of Sargent's brush work there is a real search for character which he indicates with remarkable and sometimes cruel precision and often with the simplest means. His work is brilliant and irresistible, full of a certain vehement vitality that render his pictures unforgettable.

Like Sargent, James J. Shannon is an American who has spent his life largely in England. His "Fairy Tales" in the Metropolitan Museum is seen with a painter's vision and rendered in beautiful color and quality although greatly harmed by the ungracious angle from which he has painted the mother's head. The painter's quality in Shannon's picture is absent, for example,

In the Corcoran Gallery, Washington
MOTHER AND CHILD
By George DeForest Brush

MRS. CARL MEYER AND HER CHILDREN

By John Singer Sargent

In the Boston Museum of Fine Arts

THE MOTHER

By Charles W. Hawthorne

in the popular story-telling picture of Frederick W. Elwell. But like nearly all English pictures, his works are well drawn, and such illustrative painting serves a purpose. Art is a dangerous adventure to amateurs. They may start with Elwell and arrive at Degas and Velasquez!

Gari Melchers, an American who has spent his life largely in north Holland, has painted robustly the robust mothers and children of the dune country, stressing to some extent the decorative elements in their quaint costumes. His pictures are refreshing in their sturdy directness and truth. Mary Cassatt and Elizabeth Nourse are American painters who reside in Europe. Both have painted motherhood and childhood with a woman's penetrating vision. Mary Cassatt was a favorite pupil of Degas, and she has carried forward many of his essential characteristics, though with much weaker draughtsmanship

Courtesy Durand-Ruel, New York

MATERNAL LOVE

By Mary Cassatt

Among American painters living in their own country who paint pictures of mothers and children a high place must be given to George De Forest Brush. As a young man

THE FIRSTBORN

By Frederick Elwell

Courtesy Babcock Galleries, New York

SANCTITY OF MOTHERHOOD

By W. R. Leigh

he produced remarkably poetic pictures of American Indians, but soon abandoned this type of work and began to paint family groups posed for, for the most part, by his wife and seven children. An admirer of the Florentine tradition, Brush has sought his ideals of beauty entirely along this path. He has not occupied himself with changing art styles or with meeting public taste. The purely human quality of these pictures, their strength, their simplicity, their beauty of subject matter, of color, design and execution ensures their endurance.

The late William M. Chase, returning to New York after student days in Munich, produced some charming full-length paintings of mothers and children following the Velasquez tradition with, at times, signs of that new admiration for the Japanese that characterized the period of his youth. One of the last pictures Chase worked on was a portrait of his wife and son finished after his death by Irving R. Wiles.

Charles W. Hawthorne is famous for the pictures he has painted at Provincetown of Portuguese fisher folk. The very young mother with her infant is a favorite theme with him. His picture of this subject in the Boston Museum with its rare color, its delicate workmanship, its search for precious tone and quality, is entirely typical. Sargent Kendall is another American painter who has made many of his greatest successes with family groups. America's strong women painters have produced some charming mother and child pictures. Miss Cecilia Beaux's portrait of Mrs. Roosevelt and her daughter Ethel, painted in the White House, is notable; Mrs. Louise Cox, who specializes in child portraits, has been very successful with the theme, as have Lydia Field Emmet, Ellen Emmet Rand, and M. Jean McLane, the latter often working in a decorative vein that recalls the English school of the eighteenth century.

The pictures painted by these talented women are valuable contributions to American art and hold their own with the best that have been wrought by any of the modern schools on the subject of those most precious of life's mysteries, motherhood and childhood.

The painting of young children as a matter of fact has always appealed strongly to women; they paint children with intimate knowledge, with a delight in a child's characterization, its gesture, its quaint dress that men rarely if ever equal. This talent has naturally been of great aid to women artists who have engaged in painting pictures of mother and child. Their pictures have a certain penetrating vision, a subtle sympathetic sentiment that render them widely appealing.

Privately owned

PORTRAIT OF MARGARET DONEGAN
A Studio Scrubwoman

By William Starkweather

This painting combines a modern democratic theme with the traditional and formal lines of the ecclesiastical "vision picture" of early Italian and Spanish Art

"There are those of great nobility of heart, upon whose lives the most potent influence is the conviction of the nearness at all times of some one greatly beloved but long since dead. To those noble natures these unseen presences are more vital and important than living people"—

Henri Nauthonier

THE PERSONALITY OF KREISLER

Fritz Kreisler as a Boy

I ASKED an eminent critic, "Why do you call Kreisler the greatest violinist? What makes him so?" "Because he combines with faultless technic an unrivaled emotional quality."

After seven years' absence Kreisler returned to London in May, 1921, and played in Queen's Hall. "The scene was most extraordinary," said Ernest Newman, ablest of English critics. "We shall never see the like again. At the end, the audience remained in the hall for a full fifteen minutes' applauding, literally without a moment's break."

Kreisler reaches the heart, and satisfies the mind. His friends say that the wellspring of his success is the nobility of his character, the unselfishness of his life. "We in India derive much consolation in life," I once said to him, "from a poem in which a man that had no shoes went sadly to a temple; there he found a man without feet, and his misery left him at once."

"I derive my consolation," said Kreisler, "in quite a different way: if I am unhappy myself, I am happy that there are others that are happy."

Kreisler is more than a musician of note. He is a scholar, a philosopher, a scientist, an art critic. He reads Latin and Greek, and speaks English, French, Spanish, German, and Italian. He has studied the science of medicine, studied art in Rome, music in Vienna and Paris. I have known him intimately for many years, and I have never heard him speak ill of others. His love for humanity is all-embracing.

He lives an incredibly simple life. Plain living and high thinking are the keynotes of his existence. "I have no right to live in luxury. My wife thinks exactly the same way. We have not built or bought a luxurious home for ourselves. So many people are homeless! We feel that to order a costly meal is to deprive others of bread. We have no right to spend money lavishly on ourselves." This from the highest paid violinist in the world! A man whose bow earns a fortune every year!

What the Kreislers save they spend to relieve distress. They are particularly sympathetic to the needs of children. During the war it is well known that they supported hundreds of artists of all nationalities who were stranded abroad.

Kreisler is often seen on street cars and trains. He has no automobile. He dines in modest restaurants. Mrs. Kreisler, a charming woman of American birth, is in complete sympathy with her husband's views and habits of life.

Kreisler says about his violin playing, "I was born with musical feeling. I knew music before I knew my A B C's, so I deserve no credit, no thanks for my art. Do people praise fishes for their swimming, or birds for singing? Moreover, if there is income from my music, it does not belong to me. It belongs to human society. I am just a medium for the distribution of a trust fund."

This is the gospel of the world-beloved artist, Fritz Kreisler.—*Basanta Koomar Roy.*

From a photo by H. T. Koshiba

A Recent Picture of the Great Violinist

DOLLS OF ALL NATIONS

FOR centuries Christmas has meant a new doll to millions of little girls throughout the world, and, probably, it will continue to for centuries to come; love of dolls is one of the deepest rooted human characteristics.

The first dolls were pieces of bone wrapped in a rag; the latest and most elaborate are those created by the famous English architect, Sir Edward Luytens, to people the tiny palace he designed for Queen Mary of England. The queen's dolls are six inches tall; there is a king in royal robes, a journalist with silk hat and note book, a plumber in overalls, a chef, a nurse, prince and princess, and, in the drawers of the lacquer chest on which the palace stands, admirals, bishops, doctors, and even a royal aunt. At night the shades are drawn and the electric lights snapped on; elevators move up and down between floors; the various rooms are fitted with miniature devices which "work." A miniature piano that can be played, miniature books that can be opened and read, and other "real" furnishings distinguish this most complete and expensive of playthings.

Egyptian

Dolls in Eskimo Dress

Siamese

A visit to any museum shows that dolls were the playthings of primitive man. At the Metropolitan Museum of Art in New York City there is a remarkable collection of Egyptian dolls depicting soldiers, priests, masons, butchers, and bakers at work at their vocations. There is even a complete brewery. These toys were intended for the tomb of a rich nobleman, but some of them are broken, and it is thought that the children of the household, answering the age-old instinct, stole into the storeroom and played with the fascinating puppets.

In many cases the dolls of antiquity were used in connection with religious ceremonies. But even religious authority has been unable to prevent children from playing with them. Mohammed forbade the reproduction of human features, yet there are dolls in Mohammedan countries to-day, and the prophet himself is said to have joined his nine-year-old wife, Ayesha, in her play with dolls.

The source of the word "doll" is itself uncertain. It is thought to have come from that of St. Dorothea, a Christian martyr whose life ended at Cæsarea in the year 303 A. D. Dolls were called "children's babies" in the middle ages. Many children were named Dorothy in honor of the saint, and children having that name were expected to be especially good—so the name was passed on to dolls. Another suggested derivation is from the Norse word *daul;* it has even been suggested that the word was evolved from "idol." The French word for doll, "*poupée,*" is believed to have come from Poppæa, the name of the consort of the infamous Roman emperor Nero. A collection of waxen images was brought to Paris during the time of the

Chinese

A Modern "Character Doll"

mad king Charles VI. Isabella, his consort, chose one representing Poppæa—because it particularly pleased the king.

In Japan, when a daughter is born to the house, the parents present the infant in arms with a collection of dolls—emperor, empress, and musicians, at least five in all. To these are added gods and goddesses, and other members of the royal family as the resources of the parents and their friends will admit. The costumes of these dolls are all correct to the smallest detail. The little daughter does not have much fun with them, however, as they are all carefully preserved, and she is allowed to play with them only on holidays, especially at the "doll festival," when the dolls are brought down from their resting place and are placed in tiers on red-covered shelves prepared for them in the guest-room. Everything a doll could desire in the way of furniture is added; the emperor and empress even look down stolidly from miniature thrones. When the daughter marries, the dolls go with her to her new home, where they are cared for until the eldest son marries, when they are given to him. In time, the collection of dolls must be considerable.

It was the custom in ancient Venice to show ecclesiastical dolls at the annual fair on Assumption Day. Ancient Venice was the Paris of that day, and as these dolls were dressed in the style that was to prevail the "next season," the exhibition was the first "fashion show." Later this custom was introduced at Paris.

Dolls in Antique Russian Costume

Dolls have been used in commerce from time immemorial. "Fashion dolls" are to be seen to-day in the windows of dressmakers. They are used by museums to show historical costumes. The Metropolitan Museum has such a collection.

Dolls are found in the churches of Latin countries. The most famous is the jeweled *bambino* in the Church of Ara Cœli in Rome.

And His Lifelike Little Sister

Colonial American

French, about 1724

French in time of Louis XIV

LOVE LETTERS OF THE FAMOUS

"IT IS a talent to love," says one of George Eliot's women characters; and the immortal Balzac observes: "One must have genius to love, and there are few such." If this be so, then the records we find in history and literature of the hearts that have loved so well and suffered so greatly are all the more touching because they are so few.

It is strange how little the expressions of love vary from century to century. The old Roman writer Pliny, living in the first century, begs his wife to write him every day, and tells her he is unhappy until she returns, in very much the same phrase as the loving husband of our own time. "My chief happiness is in yours," wrote Pliny nearly 2,000 years ago. "Believe me, there is nothing I would not do if it would make you happy. Life is no life when you are away."

In the following letters, reflecting the emotions of widely varied characters in widely different times, we find the old story retold. Love's language is the same with all mankind.

The poet Otway to the actress Mrs. Barry (about 1670):

Consider how I love you. What would I not renounce or undertake for you? I must have you mine, or I am miserable; and nothing but knowing which shall be the happy hour can make the rest of my life tolerable. Give me a word or two of comfort, or resolve never to look on me more; for I cannot bear a kind look, and then a cruel repulse. This minute my heart aches for you; and if I cannot have a right in yours, I wish it would ache till I could complain to you no longer. Remember poor Otway.

The poet Percy Bysshe Shelley and his wife Mary Wollstonecraft Shelley, author of "Frankenstein"

The dramatist Farquhar to the actress Mrs. Oldfield (about 1700):

Give me leave to call you "dear Madam" and tell you I am now stepping into bed, and that I speak with as much sincerity as if I were stepping into my grave. Sleep is so great an emblem of death that my words ought to be as real as if I were sure never to awaken. Then may I never again be blest with the light of the sun and the joys of last Wednesday, if you are not as dear to me as my hopes of waking in health to-morrow morning. Your charms lead me, my inclinations prompt me, and my reason confirms me.

Dean Swift to "Stella" (1710):

I am almost crazed that you vex yourself for not writing. Cannot you dictate to Dingley, and not strain your dear little eyes? I am sure it is the grief of my soul to think that you are out of order. Pray be quiet, and if you will write, shut your eyes and write just a line and no more, thus, *How do you do, Mrs. Stella?* That was written with my eyes shut. Faith, I think it is better than when they are open; and then Dingley may stand by, and tell you when you go too high or too low. . . .

Richard Steele to Mary Scurlock (1707):

With what language shall I address my lovely fair, to acquaint her with the sentiments of a heart she delights to torture? I have not a minute's quiet out of your sight; and when I am with you, you use me with so much distance that I am still in a state of absence, heightened with a view of the charms which I am denied to approach. In a word, you must give me either a fan, a mask, or a glove you have worn, or I cannot live; otherwise, you must expect that I'll kiss your hand, or, when I next sit by you, steal your handkerchief. You yourself are too great a bounty to be received at once; therefore I must be prepared by degrees, lest the mighty gift distract me with joy. Dear Mrs. Scurlock, I am tired with calling you by that name; therefore, say the day in which you will take that of *Madam.*

Laurence Sterne to Kitty Tourmantelle (1759):

My dear Kitty, I have sent you a pot of sweetmeats and a pot of honey, neither of them half so sweet as yourself; but don't be vain upon this, or presume to grow sour upon this character of sweetness I give you; for if you do I shall send you a pot of pickles by way of contraries to sweeten you up and bring you to yourself again. Whatever changes happen to you, believe me I am unalterably yours, L. S.

Dr. Johnson to Mrs. Thrale:

Is not my soul laid open before you in these veracious pages? These are the letters by which souls are united and by which minds naturally in unison move each other as they are moved themselves. I know, dearest lady, that in the perusal of this—such is the consanguinity of our intellects—you will be touched as I am touched. I have indeed concealed nothing from you, nor do I ever expect to repent of having thus opened my heart.

Robert Burns to "Clarinda" (1788):

Be assured I shall ever think of you, muse on you, and, in my hours of devotion, pray for you. The hour

that you are not in all my thoughts—"be that hour darkness! let the shadows of death cover it! let it not be numbered in the hours of day!"

The poet Shelley to his wife Mary (1818):

Well, my dearest Mary, are you very lonely? Tell me the truth, my sweetest, do you ever cry? I shall hear from you in Venice, and once on my return here. If you love me, you will keep up your spirits. . . . I accept your present of your picture, and wish you would get it prettily framed for me. I will wear for your sake upon my heart this image which is ever present to my mind.

Byron to Countess Guicciola (1818):

I feel I exist here, and I fear that I shall exist hereafter—to what purpose you will decide; my destiny rests with you, and you are a woman, eighteen years of age, and two out of a convent. I wish that you had stayed there, with all my heart—or, at least, that I had never met you in your married state.

But all this is too late. I love you and you love me—at least, you say so and act as if you did so, which last is a great consolation in all events. But I more than love you, and cannot cease to love you.

John Keats and Fanny Brawne. The silhouette is the only known portrait of Keats' loved one

The poet Keats to Fanny Brawne (1819):

My sweet Fanny, will your heart never change? My love, will it? I have no limit now to my love. Your note came in just here. I cannot be happier away from you. 'Tis richer than an argosy of pearls. Do not threat me, even in jest. I have been astonished that men could die martyrs for religion—I have shuddered at it. I shudder no more; I could be martyred for my religion—love is my religion—I could die for that. I could die for you. My creed is Love, and you are its only tenet. You have ravished me away by a power I cannot resist; and yet I could resist till I saw you; and even since I have seen you I have endeavored often to "reason against the reasons of my love." I can do that no more—the pain would be too great. My love is selfish. I cannot breathe without you. Yours forever.

King Henry VIII to Anne Boleyn (1528):

My Mistress and Friend—My heart and I surrender ourselves into your hands, beseeching you to hold us commended to your favor, and that by absence your affection to us may not be lessened; for it would be a great pity to increase our pain, of which absence produces enough and more than I could ever have thought could be felt; reminding us of a point of astronomy, which is this, the longer the days are the more distant is the sun, and nevertheless the hotter; so it is with our love, for by absence we are kept at a distance from one another, and yet it retains its fervor, at least on my side. I hope the like on yours, assuring you that on my part the pain of absence is already too great for me; and when I think of the increase of that which I am forced to suffer, it would be almost intolerable but for the firm hope I have of your unchangeable affection for me. And to remind you of this sometimes, and seeing that I cannot be personally present with you, I now send you the nearest thing I can to that; namely, my picture set in bracelets with the whole of the device, which you already know, wishing I were in their place when it should please you.

This is from the hand of your loyal servant and friend, H., R.

Walter Raleigh to his wife, written after his condemnation to death in 1603:

You shall now receive, dear wife, my last words in these, my last lines. My love I send you, that you may keep it when I am dead; and my counsel, that you may remember it when I am no more. I would not by my will present you with sorrows, dear Bess; let them go to the grave and be buried with me in dust. And seeing it is not the will of God that I shall ever see you more in this life, bear it patiently and with a heart like thyself.

Firstly, I send you all the thanks my heart can conceive, or my words can express, for your many troubles and cares taken for me.

Secondly, I beseech you by the love you bare me living, do not hide yourself in grief many days, but seek to help the miserable fortunes of our poor child. Thy mourning cannot avail me; I am but dust. . . . Remember your poor child for his father's sake, who chose and loved you in his happiest time. God is my witness, it is for you and yours I desired life; but it is true I disdain myself for begging of it. For know, dear wife, that your son is the son of a true man, and one who in his own respect despiseth death. I can write no more.

The everlasting God, Infinite, Powerful, Inscrutable, keep thee and mine. My own true wife, farewell.

Lord Nelson to Lady Hamilton (at sea, August, 1803):

We have had, my dearest Emma, two days pretty strong gales. This is the fourth gale we have had since July 6, but the "Victory" is so easy at sea that I trust we shall never receive any material damage.

It is never my intention, if I can help it, to go into any port; my business is at sea, and to get hold of the French fleet; and so I shall, by patience and perseverance. . . .

I entreat that you will let nothing fret you, only believe, once for all, that I am ever your own Nelson. I have not a thought except on you and the French fleet. All my thoughts, plans, and toils tend to those two objects, and I will embrace them both so close, when I can lay hold of either one or the other, that the devil himself should not separate us. Don't laugh at my putting the French fleet and you together, but you cannot be separated. I long to see you both in your proper places: the French fleet at sea, you at dear Merton, which, in every sense of the word, I expect to find a paradise.

THE GREATEST VIOLIN MAKER

"And in its hollow chamber thus,
The maker from whose hand it came
Had written his unrivaled name,
Antonius Stradivarius."—Longfellow

JAN KUBELIK, world-famous violinist, was crossing to England for a concert tour when his steamer collided with another in the Channel. In the excitement he forgot his own danger, but, rushing to his cabin, tied a life preserver around his Stradivari violin—an instrument he values at $100,000. This is many times more than any violin was ever sold for, but Kubelik would not give up the "emperor of his collection" for less. He has an Indian servant to carry the treasured antique about on tours, and give it the care needed to keep it in condition.

Fritz Kreisler has a Stradivari violin that he appraises at $30,000, and another made by Joseph Guarneri. Albert Spalding's pet violin also bears the label of the great Guarneri, and the date 1735.

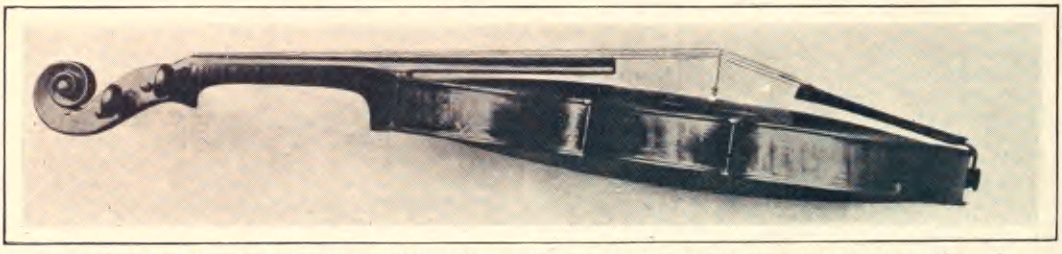
To distinguish an artistic imitation of an old violin from a real one requires years of study and experience. A well-preserved Stradivari brings from ten to twenty-five thousand dollars. A good modern imitation of an Italian masterpiece can be bought for a hundred dollars. Different specimens of instruments by the same maker sell for a variety of prices, dependent on the period when they were made, the state of the wood and varnish, the workmanship, the tone, the beauty of finish, and historic association. It is believed that there are about five hundred Stradivari violins now in existence, and a dozen of these are owned in the United States. Thousands of factory-made violins are sold with spurious labels of seventeenth- and eighteenth-century makers.

Stradivari, or Stradivarius as the name was given on the Latin label inscriptions, knew little about the principles of acoustics, but he was a supremely good carpenter. Like his master, Nicolo Amati, at whose death he inherited tools, models, and a stock of choice wood, Antonio Stradivari excelled in the fitting of joints, the cutting of sound holes, and the application of the celebrated Cremona varnish. Players and collectors came from all over Europe to buy his violins. He usually got about $20 apiece for them.

The master was born, probably in 1644, in the town of Cremona in North Italy. He began as a very little boy to work with Amati, and worked almost up to his death, at the age of 93. Altogether he turned out upward of a thousand violins, violas, and violoncellos. The "grand pattern" violins, made between the years 1700 and 1725, are the finest. They are solid, flat, gently curved, with sound holes close together, and they glow with the brilliancy of Japanese lacquer. The arch of the typical "Strad" is low; the color ranges from clear straw-yellow to cherry-brown or deep auburn-red.

There is a tradition that wood cut from the south side of a tree gives a richer vibration. Stainer, the Tyrolean maker, used to pick out trees that had begun to die off at the top. For the sound board, or belly, of the instrument, pine or spruce is chosen; for the back, sides, scroll, and neck, maple wood. The secret of the unrivaled Italian varnish, which preserved the wood and made it resonant, died with Stradivari.

Old instruments are not always better than modern ones. Their condition vitally affects the tone. But it is quite certain that no violins made in the present time will be as sonorous, vigorous, and sweet two hundred years from now as the beautiful instruments tooled with skill and care by the violin makers of Cremona. *Richard Dean.*



A typical Stradivari violin ("Healy," 1711), made at the height of the master's career. Note the length of the instrument and the low arch

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THE GREATEST CHRISTIAN SHRINE

The Place of the Nativity at Bethlehem in the Holy Land

Crypt under the altar of the Chapel of the Nativity, which is revered as the veritable birthplace of Christ. The star marks the spot where the infant Christ is believed to have lain. It bears the arms of France.

AT CHRISTMAS the eyes of the Christian world are turned on the little town of Bethlehem in Palestine, for there, in a grotto on the eastern slope of a rocky ridge, is situated the traditional birthplace of Christ.

St. Luke says: "And they came in haste, and found Mary, and Joseph, and the babe lying in a manger."

A huge church, its main entrance walled up to prevent Mohammedan soldiers from using it as a stable, covers the greatest Christian shrine. Three faiths jointly control it—Greek Catholic, Roman Catholic, and Armenian. The church is of such simple architecture and obvious antiquity that it is believed to be in the main the structure the Greek emperor Constantine caused to be built. Before Constantine's time, according to legend, the Roman emperor Hadrian razed the chapel that stood on the spot and supplanted it with a temple of Adonis as an insult to the Christians.

Around the Church of the Nativity have raged the storms of history. It was threatened with destruction in the countless wars that ravaged the Holy Land. The Moslem invasion left it untouched, miraculously, the legend says. When recaptured by the Crusaders, a Greek emperor restored it and decorated it with gold mosaic. King Edward IV of England gave lead to reroof it, which at the end of the seventeenth century the Turks stripped off and made into bullets. About this time the Greek Church secured control of the church, which it enjoyed under the rule of the Turks until 1850, when the Latins, supported by Napoleon III, demanded the key to the main entrance and the right to place a silver star on the birthplace of Christ. Russia supported the Greek Church in its opposition to these demands, and the controversy was one of the causes of the Crimean War.

In the Chapel of the Nativity, under the large church, is the rocky crypt, marked with a silver star and blazing jewel-encrusted lamps, in which the infant Christ is believed to have lain. A rich altar surmounts it. Six of the fifteen lamps that burn in this recess belong to the Greek Church, five to the Armenian, and four to the Roman Catholic.

In the chapel is shown a marble manger which is said to have cradled Jesus, but the crypt itself may have been the manger, for a manger in Syria is merely a hollow place scooped in the side of a rocky wall. Great painters have overlooked this, and placed the infant Christ in the wooden manger familiar to the western world.

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A MILLIONAIRE PLAYWRIGHT

FRANZ MOLNAR, Hungarian playwright, creator of queer personalities, has invented no character more fantastic than his own. He is a man of mystery to millions that know his name and go to see his plays. A master of satire and whimsy, he has written a dozen successes that have earned him fortune and renown. In Europe his work creates more discussion than that of any other author. In America his best known plays are "The Devil," "The Phantom Rival," "Where Ignorance is Bliss," and "Liliom." "Liliom" began a long run under the auspices of the Theatre Guild in the spring of 1921. At the present writing two companies are playing it in New York, one in English and one in Yiddish. When "The Devil" was produced here several years ago, two companies played it simultaneously, also.

From a portrait drawing made in Vienna
Franz Molnar

Molnar is very rich, as rich as he is eccentric. It is said that he possesses more gold than the Austrian Government. He has great wealth, while his countrymen starve. In Budapest, his native city, people often rise and cheer when he enters a meeting place. The successful humorist, the millionaire playwright, the bright light of café life, is envied and extravagantly admired, but he is also intensely disliked for his boorish ways. Once, when he was asked to make a speech at a dinner to a poet, he spent all the time allotted him ridiculing the verses of the guest of honor.

Molnar could live in a palace, surrounded by luxury. He chooses, instead, a two-room apartment in an obscure hotel, on an island in the Danube. The island is reached from Budapest by bridge or ferry. Molnar uses the bridge—he is afraid of water and mistrusts all boats. This is the reason he has never crossed the Atlantic.

He was born in 1878, the son of a well-to-do Jewish merchant. From the time he began to write, as a youth in college, his facility for characterization and delicate phrase made his work stand out. His efforts as a journalist brought him not only fame but also a wife, the daughter of a prominent editor. Their life together lasted only a few months. For years a literary duel was carried on between the playwright and his former wife. Madam Molnar made it a point to get a position on whatever newspaper staff her husband was working. Often their contributions appeared in adjoining columns. During the World War they were both engaged as correspondents. She exceeded him in courage, but he outstripped her in writing ability, and had the satisfaction of seeing many of his human-interest stories of the war reprinted in the press of England, France, and America.

Some people say that Molnar lives in his dreary rooms alone; others that he has the companionship of a second wife, an actress who sometimes appears in his plays. In appearance he is compared to Oscar Wilde. He has a plump pink face, penetrating dark eyes, graying hair, and a heavy-set figure of medium height.

As a dramatist, Molnar has the faculty of stirring curiosity and interest in the minds of the masses, and he wins high praise from serious critics, as well. That is why his plays, often sown in cynicism and sin and frailty, reap such a golden harvest. The best thing he has done in a long while is "Liliom," the biography of a hoodlum and a criminal. The play failed when first produced abroad, but after ten years it has been revived with enormous success. From "The Phantom Rival" a libretto has been created for a melodious operetta called "The Love Letter," in which John Charles Thomas has the leading rôle. Molnar is the Midas of playwrights. Whatever he does seems bound to turn into gold. *Ann Foster Chapin.*

"Why my father is . . ."

she hesitated and grew red

IN an eastern college a group of girls were talking about their fathers, in that proud, confident way that young people have.

"My father is president of a railroad," one of them said.

"And mine is a judge."

"And mine owns the largest factory in our town." . . . The fourth girl was silent; the others turned to her inquiringly.

"Why my father is" . . . she hesitated, grew red, and then raising her head defiantly continued, "my father is just the kindest old dad in the world."

And with that she turned and brushing a rebellious tear from her eyes dashed out of the room.

The two fathers who started together To make men's hopes come true

Years ago, in a big organziation, two young men set out hopefully side by side. Each was married, and their little homes were not far apart, their children played together.

As the years went by one forged ahead. He went out on the road to sell goods, but selling alone did not satisfy him. He found a way to learn something of accounting and costs, something of factory and office management, of advertising and merchandising and corporation finance.

And because such knowledge simply cannot be hid, he came ultimately to the top of the company where it is his business to direct the activities of men in all these various departments.

The other man was equally faithful and worked equally hard, but his knowledge never extended beyond the one department of the business where he began.

He is head of that department today—chief accountant—a useful cog in the great machine which the other man controls.

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Both men are successful in a sense. Both are adored by their children as the "kindest old dads in the world." But the one man has realized in full upon his opportunities, and the other has not.

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??? WHO: WHAT: WHEN: WHY ???

***We print below the answers to several of the more important questions included in The Mentor's recent Questionnaire.*

Question. Name the planets in our solar system.

Answer. The Earth, Mercury, Venus, Jupiter, Mars, Saturn, Neptune, and Uranus.

Question. What animal or flower is associated with the following countries: France, England, Scotland, Russia, Ireland?

Answer. France, fleur-de-lys. England, lion. Scotland, thistle. Russia, bear. Ireland, shamrock.

Question. Who was the Maid of Orleans, the Little Corporal, the Iron Chancellor, Le Grand Monarque, the Scourge of God.

Answer. Joan of Arc, Napoleon, Bismarck, Louis XIV of France, Attila, the leader of the Huns.

Question. What is the Holy Grail?

Answer. The Holy Grail is the cup used by Christ at the Last Supper. In this vessel Joseph of Arimathea caught the last drops of Christ's blood as he was taken from the cross. By Joseph, according to one account, the cup was carried to Britain. Other accounts affirm that it was brought by angels from heaven and entrusted to a body of knights, who guarded it on the top of a mountain: when approached by anyone not perfectly pure, it vanished from sight. The Grail having been lost, it became the great object of search or quest to knights errant of all nations, none being qualified to discover it but a knight perfectly chaste in thought and act.

Question. Who wrote "America," "Home, Sweet Home," "Psalm of Life," "Thanatopsis," "The Raven," "Old Sweetheart of Mine," "Recessional," "Crossing the Bar," "Lady of the Lake," "Rip Van Winkle," "In Flanders Fields," "Poor Richard's Almanac," "The Tempest"?

Answer. Samuel Francis Smith, an American Baptist clergyman, wrote "America." "Home, Sweet Home" —John Howard Payne. "Psalm of Life"—H. W. Longfellow. "Thanatopsis"—William Cullen Bryant. "The Raven"—Edgar Allen Poe. "Old Sweetheart of Mine"—James Whitcomb Riley. "Recessional"—Rudyard Kipling. "Crossing the Bar"—Alfred Tennyson. "Lady of the Lake"—Sir Walter Scott. "Rip Van Winkle"—Washington Irving. "In Flanders Fields"—Lieut. Col. John D. McCrae. "Poor Richard's Almanac"—Benjamin Franklin. "The Tempest"—Shakespeare.

Question. Who painted the Sistine Madonna, The Last Supper, Baby Stuart, Simplicity, The Night Watch, The Angelus, The Horse Fair, Breaking Home Ties?

Answer. Raphael, Leonardo da Vinci, Van Dyck, Sir Joshua Reynolds, Rembrandt, J. F. Millet, Rosa Bonheur, Thomas Hovenden.

Question. Who designed St. Peter's, Rome; St. Paul's, London; St. John the Divine, New York; Brooklyn Bridge; the Capitol, Washington?

Answer. Michaelangelo designed the dome and the general features of the edifice. St. Paul's was designed by Sir Christopher Wren. Heins and LaFarge designed St. John the Divine. Brooklyn Bridge was designed by John Roebling and his son Washington. Thornton made the general design of the Capitol, Latrobe and Bulfinch made modifications, and T. U. Walter made the extensions and the dome.

Question. Who modeled The Thinker, The Lion of Lucerne, The Greek Slave, Cupid and Psyche, Statue of Liberty, New York?

Answer. Rodin, Thorwaldsen, Hiram Powers, Canova, Bartholdi.

Question. What are the following, and where are they: The Parthenon, Taj Mahal, Pantheon, Alhambra, The Madeleine, Christ of the Andes, The Sphinx, Bridge of Sighs, "The Cheshire Cheese," The Escorial, Hall of Mirrors, Elgin Marbles, The Bastille, The Vatican, The Laocoon?

Answer. The Parthenon is the temple of Pallas Athene situated on the hill, the Acropolis, at Athens. The Taj Mahal is a beautiful tomb built at Agra, India, by Shah Jehan in memory of his wife, Taj Bibi Mumtaz-i-Mahal. The Pantheon is a building in Rome dedicated to the divine ancestors of the Julian family. There is also a Pantheon in Paris, which serves as a mausoleum. The Alhambra is a splendid palace built by the Moors in Granada, Spain. The Madeleine is a famous church in Paris. Christ of the Andes is a great statue standing on the border line of Argentina and Chili, a monument of peace between these two countries. The Sphinx is an enormous crouching figure, hewn from natural rock, near the Great Pyramid, Egypt. The Bridge of Sighs is a bridge in Venice over which persons used to pass for trial or judgment. The Cheshire Cheese is an old tavern in London, where David Garrick, Dr. Johnson, and other famous writers used to meet. The Escorial is an enormous monastery—palace—church—built by Philip II, situated thirty miles from Madrid, Spain. The Hall of Mirrors is a famous room in the Palace of Versailles lined with mirrors, where many famous treaties have been signed, including the Franco-Prussian Treaty of 1870 and the recent treaty that ended the World War. The Elgin Marbles are the Marbles of the Frieze of the Parthenon, brought to London by Lord Elgin, and placed in the British Museum. The Bastille was a state prison in Paris which was assaulted and destroyed by the mob in 1789. The Vatican is the name of the papal palace in Rome. The Laocoon is a group of classic statuary in the Vatican, showing the figure of a father and two sons in the toils of great sea serpents.

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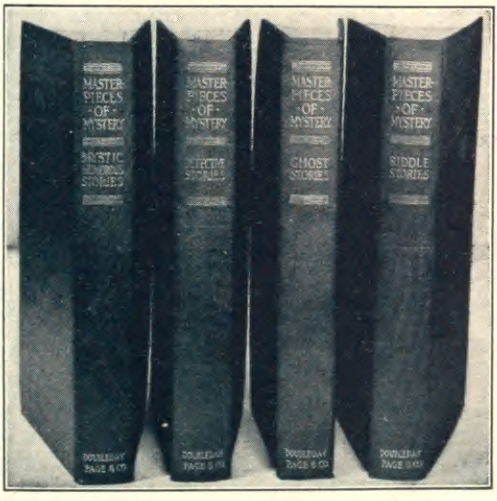

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THE OPEN LETTER

MUSIC is now declared to be "medicine." Mr. Kreisler tells us that science has recognized its value. This is not surprising, for the effect of music on life and character was noted long ago. In all the ages, music has been credited with a potent influence.

The evil spirits left Saul under the spell of David's harp. At the sound of the ram's horn the walls of Jericho were destroyed, and Gideon conquered the Midianites with the blare of trumpets. The Marseillaise and The Rákóczy March, in times past, aroused the people to madness; and, to-day, men of all races thrill in heart at the sound of their national hymn. Some music brings peace of mind; and other music, storm and stress. What is its power, that it can arouse noble aspirations, or, on the other hand, can entice one to depravity? Why does the soldier rise to heroic action at the call of music—and why does the infant slumber under its soothing anodyne? In the animal world, why does a horse dance to music; why does a dog sit spellbound under certain strains, and moan in sympathy to them; and why do snakes uncoil, lift their heads, and sway in response to the Hindu charmer's plaintive pipe? There must be some significant reason for all this.

★ ★ ★

That mere sounds produce physiological effects on animals and man, and that these effects vary with the pitch, intensity, and quality of tone, has been proved by many tests. One student of the subject, Mr. Scripture, in his "New Psychology," tells us of the results of some of his own personal tests:

With the thumb-and-finger grip, the greatest pressure I can exert during *silence* is 4 kilos. When one plays the giants' motive from *Rheingold* my grip shows 4½ kilos. The slumber motive from *Walküre* reduces the power to 3¼ kilos.

When music can produce such physical effects it is only natural that man should, in the course of human experience, take account of it, and use it, to his advantage. The medicine man of the American Indian tribes knew something of this when he employed musical instruments as important parts of his medical outfit. Through the course of years, music often has been recommended by physicians as a soothing agent in various ailments—especially those brought about by aggravated nervous conditions. It is only within recent years, however, that our medical profession has taken music seriously as a method of treatment. Articles and books are now discussing the subject. Two able contributions in a recent number of the "Musical Quarterly" present the claims of music as "medicine" and as a "means to health."

★ ★ ★

Cases are cited of actual cures of serious and baffling afflictions by musical treatment —Dora Mintz, the sufferer from sleeping sickness referred to by Mr. Kreisler, is one. It was only after all other methods had failed in Dora Mintz's case that a young pupil of Leopold Auer, by name Mitchell Hoffman, prevailed on the doctor to try Russian melodies—the patient's own national music. The young woman's spirit responded to the call of Hoffman's violin, and she recovered.

★ ★ ★

It may not be altogether fanciful then to say that the day may come when our family practitioner will prescribe not only a "tablespoonful" of soothing syrup but also an "earful" of lullabies. Perhaps the medicine chest will have for companions the piano, organ, and violin or the phonograph and pianola, and we shall not only *see*, but also *hear*, ourselves get well. We may at least assert, in all seriousness, that the ear will in time become one of the accepted channels of healing.

W. D. Moffat

EDITOR

EDITORIAL NOTE—So much interest has been aroused by The Mentor Questionnaire in the September number, and so many requests have come in for answers to the questions, that we have decided to reprint the Questionnaire with a complete list of answers. This will be sent, on request, to any reader of The Mentor. A Prize Mentor Questionnaire will be announced later on.

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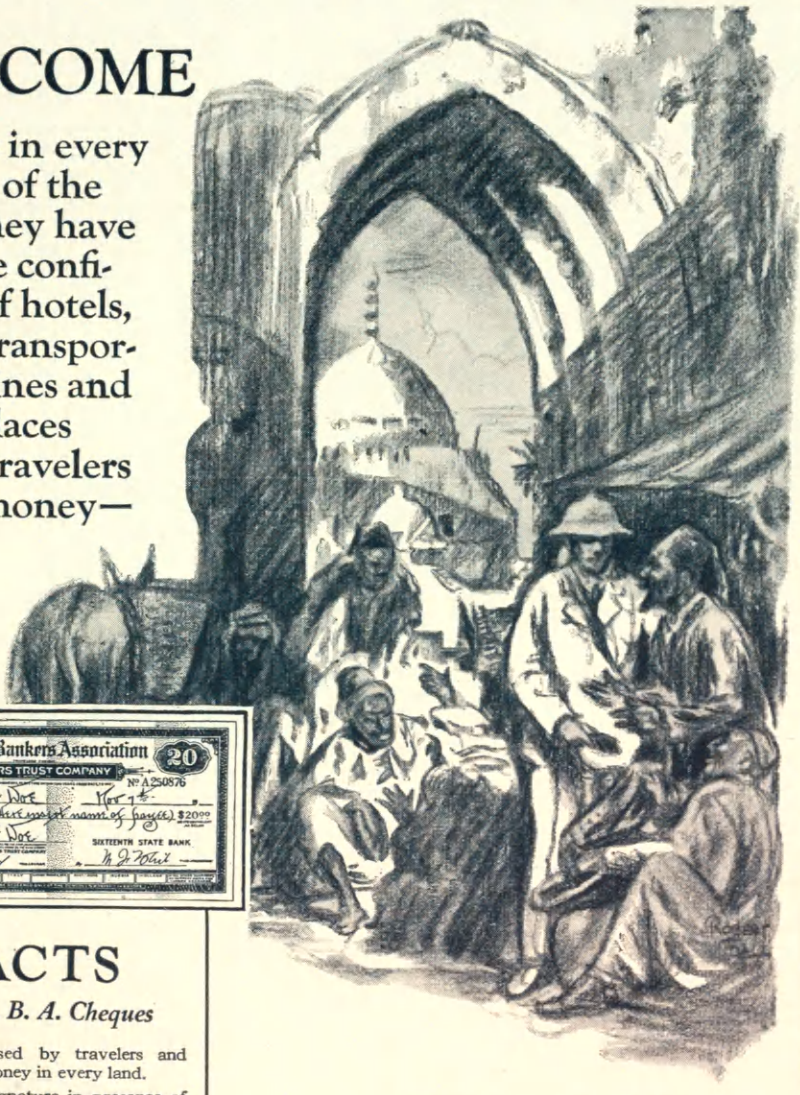

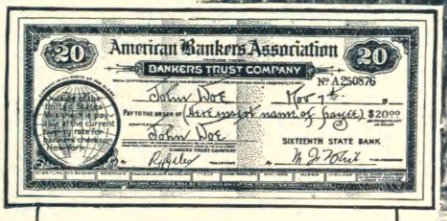

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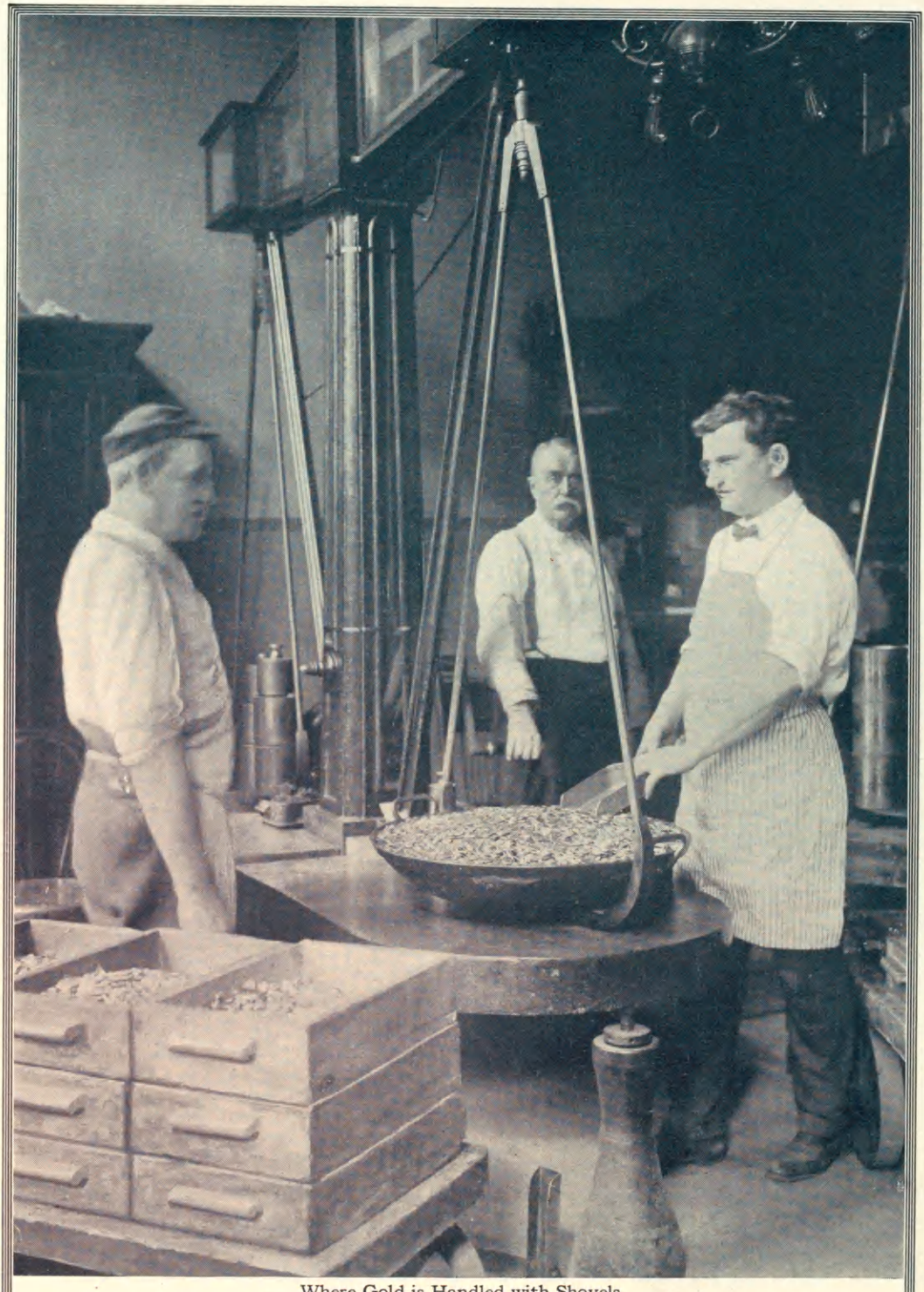

Where Gold is Handled with Shovels

Weighing a shipment of gold coins at a government assay office preparatory to melting them down, certifying the amount of gold contained in them, and recasting into bars that are turned in to the Treasury for currency

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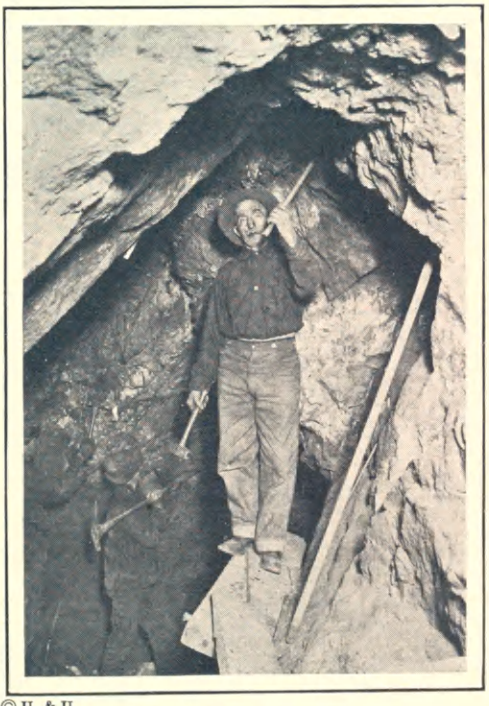
THE STORY OF GOLD

By JOHN HAYS HAMMOND

THE preëminence of gold, throughout all history, as a precious thing most desired by man, is not altogether easy of explanation. As a metal it is far less valuable to man than iron, coal, and a score of other substances of daily use. Yet its name has always stood for super-excellence.

This high regard for gold is probably based, in part, upon a race memory of the time when it was the only metal known to mankind. Unlike other metals, which, as a rule, require smelting, or some other process of reduction to separate them from their ores, gold is abundantly found in an uncombined or "native" state, so that our ancestors found it lying free and may have made ornaments of it long before they discovered the use of fire. It is so soft as to be easily wrought, while its beauty appeals even to the untutored savage. Gold ornaments are found among the remains of the most ancient civilizations. Methods of producing gold are illustrated in Egyptian rock carvings as far back as 2500 B. C.



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One Thousand Below

The search for gold takes men into the bowels of the earth. This man, in the Eagle River Canyon mine in Colorado, is 1,000 feet below surface

Sheepskins used in the earliest times to catch particles of the precious metal washed from river sands probably gave rise to the story of Jason's quest of the Golden Fleece. The Code of Menes, founder of the first dynasty of Egyptian kings (about 4400 or 3600 B. C.), fixes the value of gold at two and a half times that of silver, indicating that, even at that date, it was used as a medium of exchange. Originally, gold and silver were weighed, when serving the purpose of money, just as gold dust is weighed to-day over the counter of the mining-camp trader, but gold coins were used some six or seven centuries before the beginning of the Christian era.

Into the Earth
Miners in India being carried below surface in a man-conveyor

Ancient monarchs seem to have set more store by the quantities of gold hoarded in their treasuries than by the extent and power of their dominions. The kings of Persia acquired by conquest the treasuries of Asia and Egypt, and the victories of Alexander the Great made him master of almost the whole gold supply of the world of his time. Plutarch—who was not as a rule a very conservative statistician—tells us that 10,000 teams of mules and 500 camels were needed to transport this wealth to Susa.* India and Asia Minor were early sources of gold, and there were others of which we have less certain knowledge; the country of the Arimaspi (Scythia, or ancient southern Russia), where the gold was said to have been guarded by griffins, and the biblical Ophir, the site of "King Solomon's mines," now very plausibly identified with Zimbabwe, in southern Rhodesia. The Romans obtained much of their gold from Spain.

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One of the World's Richest Mines
Mount Morgan, in Queensland, Australia, which has produced more than $100,000,000 in gold and copper

In the Middle Ages, the su-

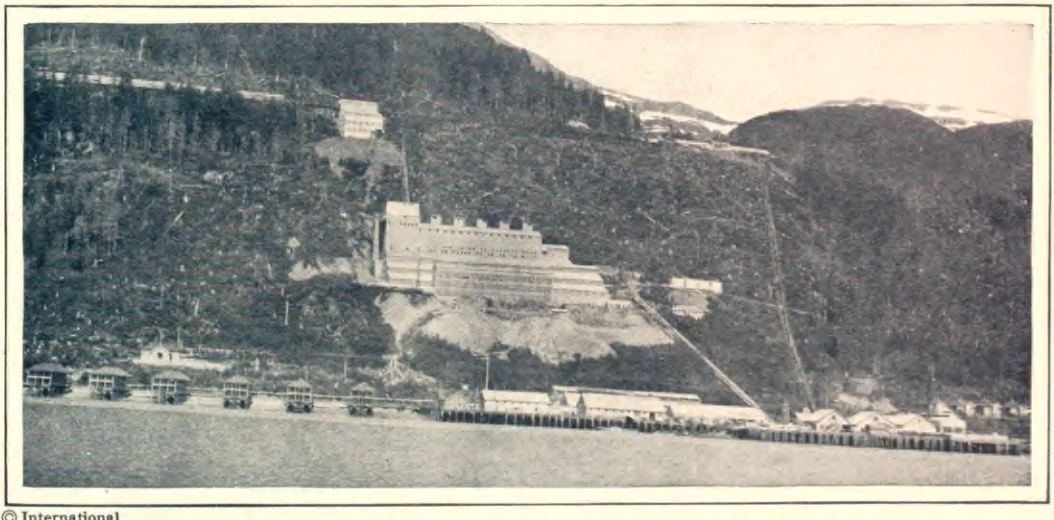
* Susa was the capital of Elam, the ancient empire north of the Persian Gulf.

A Modern Mill for Extracting Gold from Ore. The Consolidated at Goldfield, Nevada

perstitious reverence for gold assumed its most striking form in the fantastic doctrines of the alchemists. Gold came to be regarded as the most perfect and "noble" of substances, and it was mystically associated with the sun, as silver was with the moon. Comparatively little of the metal was produced by medieval miners, and it is estimated that the total stock of gold in the world at the end of the fifteenth century did not exceed a value of $225,000,000.*

Coming down to modern times, we find that gold plays a conspicuous rôle in human affairs, for reasons that can be clearly defined. First of all, it is the best monetary standard thus far discovered; and organized society could hardly exist without money. About one fourth of the annual production is now employed in coinage. Gold is suitable for use in making an immense variety of objects in which it is desired to combine beauty with utility, for the reason that it is extremely malleable and ductile, does not tarnish, and is not easily rusted or dissolved. For such uses it is commonly alloyed with copper or silver. The same qualities make it ideal for the manufacture of jewelry and for other uses, such as gilding and the making of gold lace. Compounds of gold are used in photography and in medicine.

* A sum not exceeding that derived from the mines of King Solomon in Rhodesia since the resumption of mining there in 1898.



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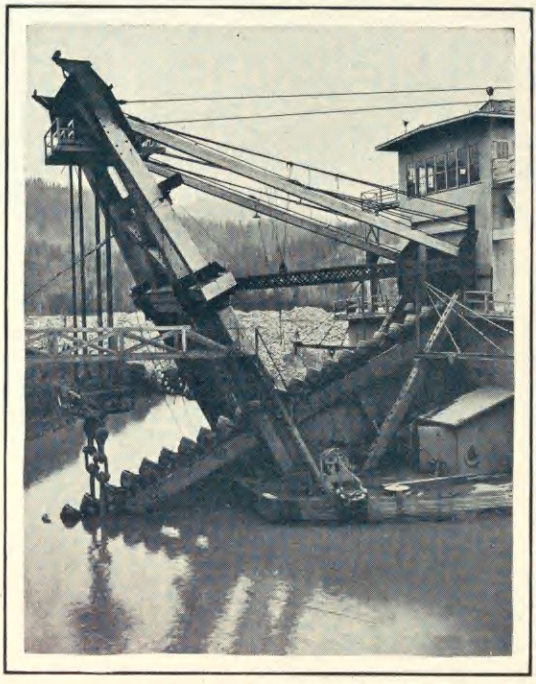
One of the World's Largest Low-Grade Gold Mines—the Treadwell, Juneau, Alaska

Lastly, it was the lure of gold that opened up some of the richest agricultural and grazing lands of the world to settlement and development. The Pacific Coast of North America and the adjacent interior were believed to be almost devoid of valuable resources before the gold rush of 1849. Speaking in the United States Senate a few years earlier, Daniel Webster said: "What do we want of that vast and worthless area—that region of savages and wild beasts, of deserts, of shifting sands and whirling winds, of dust, of cactus, and of prairie dogs? To what use could we ever hope to put those great deserts and those endless mountain ranges?" Gold seekers populated the country and the transcontinental railways followed the trails they had blazed. To-day, California is one of the most productive agricultural regions of the earth, while the value of her manufactures is ten times the greatest value ever attained by her output of gold. Much the same thing has happened, and is now happening, in Australia, north-

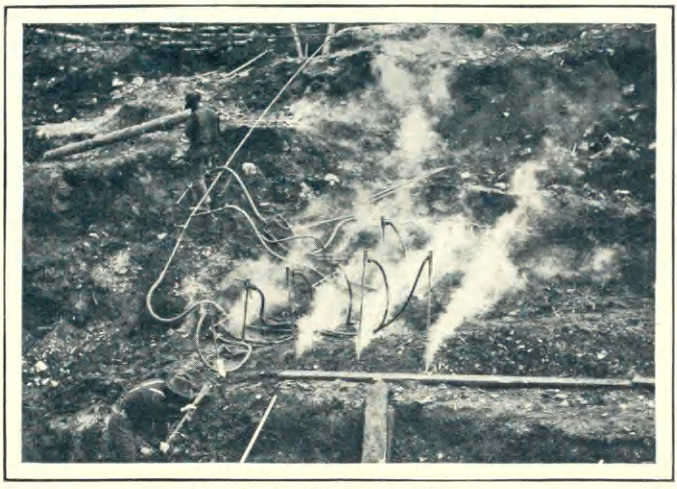


Dredging for Gold

An endless chain of buckets brings up the gravel from which the gold is extracted and the refuse passed out at the rear

This Dredger Earns a Quarter of a Million Dollars Annually

One of many operating in Sacramento County, California. Dredgers are frequently assembled in the center of a valuable orchard, where artificial ponds must be constructed in which to float them



Outwitting Winter in Alaska
Thawing out frozen ground with "steam points" to enable mining to go forward

western Canada, and Alaska. Gold "booms" brought settlers and railroads, and thus the wilderness was reclaimed.

Gold is an element that forms few chemical compounds, but, on the other hand, readily enters into the intimate mixtures with other elements known as "alloys." In nature, it is generally found alloyed with silver and with smaller quantities of copper and other metals. It is very widely distributed over the world. Analyses of sea water always reveal traces of gold, the largest percentage, amounting to nearly 4 grains to the ton of water, being found in samples of water dredged up from great depths of the Atlantic. The total amount of gold in the ocean is *thousands of millions of tons;* according to one estimate, there is *fifty million dollars' worth of it for every inhabitant of the globe!* Many efforts have been made to tap this vast treasure, but no process that is commercially practical has yet been discovered.

Gold is found in many river gravels in the form of nuggets, grains, and dust. Deposits of gold-bearing gravel and sand are called "placers" (generally pronounced in this country with a short *a*, as in "cat"), and, until a recent time, such deposits yielded the bulk of the world's gold supply. Nuggets are lumps weighing from a quarter of an ounce up to a hundred pounds or more. The "Welcome Stranger" nugget, found at Dunolly, Victoria, in 1869, weighed 2,268 ounces.* The gold in placer deposits probably all came from the breaking down of gold-bearing rocks under the action of air and water. Gold is found in rocks in deposits variously known as "veins," "lodes," "ledges," and "reefs," most-

*In 1854 a mass of gold weighing 2,440 troy ounces, and valued at $45,000, was found near the outcrop of a vein at Carson Hill, California. A mass of gold said to weigh 300 pounds avoirdupois was on exhibition at the World's Fair in London. It was brought from Chile.

Hydraulic Mining in Alaska
Ancient river beds and other gravel deposits are washed down with high-pressure streams and the gold extracted

ly associated with quartz. Such gold ores must be crushed before the gold can be extracted, and the present supply of the metal is obtained in this manner. Gold is also found chemically combined with tellurium. About one tenth of all the gold produced in the United States is obtained as a by-product in the smelting of copper and lead ores (chiefly the former).

Methods of mining and reducing gold have undergone revolutionary improvements in recent years, and this is one explanation of the fact that the annual production has more than tripled since the middle of the last century. It is interesting to contrast the primitive expedients of the early California gold seekers, for example, with the operations of a modern gold-mining company, which sometimes spends a million dollars in the purchase of equipment and the employment of experts before actual mining is begun.

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A Claim on the Klondyke

Women shared the hardships of the last great gold rush. A typical "Klondyker" and his "claim" in the early days of the rush

Gold that occurs in placers is obtained by "washing," while that found in solid rock is mined after the manner of most other mineral deposits; namely, by sinking shafts, driving tunnels, and blasting out the ore.

The method of washing commonly followed by the California pioneers has left a memento in our language in the shape of the expression "to pan out." Their universal implement was a receptacle almost identical with the ordinary dish pan. Gravel (called "dirt") was shoveled into the pan, which was dipped in water and then, while tilted, given a gyratory motion, causing the softer material to slop over the side, while the heavier particles, including any gold present, sank to the bottom. The gold pan is still used by prospectors, but is otherwise nearly obsolete. The "rocker" and the "tom," also devised in the early days, are one degree less rudimentary than the pan. They include a sieve, to hold back the coarser material, while the stream of sand and water flows over obstructions known as "riffles," which catch the gold. Mercury, added at intervals, prevents the escape of the finer particles of gold, as the mercury and gold form an amalgam, which, on account of its weight, is not carried along by the current. "Amalgamation" is a feature of nearly all processes of extracting gold, whether from placers or vein deposits.

Washing is performed on a much larger scale by the process of "sluicing." A "sluice" is a long, slightly inclined trough, made up of "sluice boxes," tapering so that the small end

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"Panning"

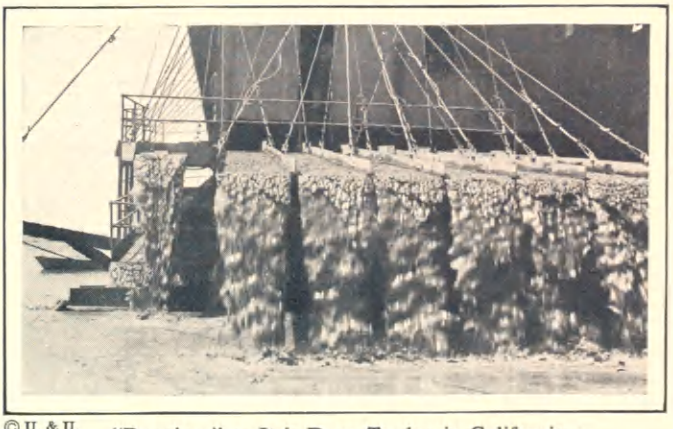
Alaskan prospectors washing gravel for gold in the "pan" which was made famous in the days of the '49 gold rush to California

of one fits into the large end of the next. The bottom of the sluice is set with riffles and sprinkled with mercury. A stream of water runs through the sluice, and the gravel is shoveled in at the upper end. At intervals varying from a day to a whole season, according to the richness of the "dirt," the sluice is "cleaned up." The gold, either free or amalgamated with mercury, is scraped from the riffles. The amalgam is cleaned in "amalgam kettles," strained through chamois leather or drilling, and heated in a retort until the mercury passes off as a vapor, leaving the gold behind.

The bulk of the gold found in placer deposits generally lies near the bottom of the layer of gravel, immediately above bed rock, and in many cases is reached by means of shafts and tunnels. When a sufficient head of water is available, the same object is more easily attained by means of hydraulic mining or "hydraulicking." In this process, immense banks of gravel are rapidly broken down by means of powerful streams of water, directed from a nozzle known as a "giant," the gravel being thus washed into riffle-set sluices. Hydraulic mining in California has involved the expenditure of millions of dollars for the construction of dams, canals, and flumes to bring down water from the high sierra. Unfortunately, the residue, or "tailings," from hydraulic operations wrought havoc in the country, filling up the rivers, causing floods, and spreading sand and gravel over farm lands, and an injunction of the courts practically put a stop to the process in the year 1884, though it has since been revived on a limited scale.*

At the present time the most productive placers are worked by means of dredges. A gold dredge is a flat-bottomed boat, with machinery for raising gravel from the bottom of a stream or pond, washing it over inclined tables to save the gold, and then dumping the tailings overboard at the stern. Dredging is not con-

* Ground could be "hydraulicked" and the gold extracted by hydraulic method at a cost, in many cases, not to exceed 3 cents per cubic yard. This is the most economical method of gold mining where the conditions are favorable.



© U. & U. "Panning," as It is Done To-day in California

fined to rivers; a dredge is often placed in a pond, excavated for the purpose, and thence works its way across a level plain, cutting out the bank in front of it and piling up the tailings behind.

The gold ore often found in vein deposits must be thoroughly crushed before the gold can be extracted. This is now generally done in a "stamp mill."

A stamp mill of the usual form consists of one or several batteries of "stamps," which are heavy iron or steel pestles, lifted by machinery and let fall in cast-iron mortars. Each stamp weighs from 1,000 pounds to a ton, and there are five to a battery, so arranged that they fall at different times. The ore, after some previous crushing in a rock-breaker, is fed into the mortar, mixed with water, and reduced by the stamps to "pulp," which passes through a screen and flows over inclined plates of copper, coated with mercury. Gold amalgam accumulates on these plates, and is occasionally scraped off, squeezed in a filter bag to remove the excess of mercury, and then retorted to recover the gold. The pulp that has passed over the plates, known as "tailings," still contains some gold, and this is generally extracted by the "cyanide process."

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Molding Gold Bars

Molten gold is poured into molds from which it is taken as bars, the form in which it is most conveniently shipped

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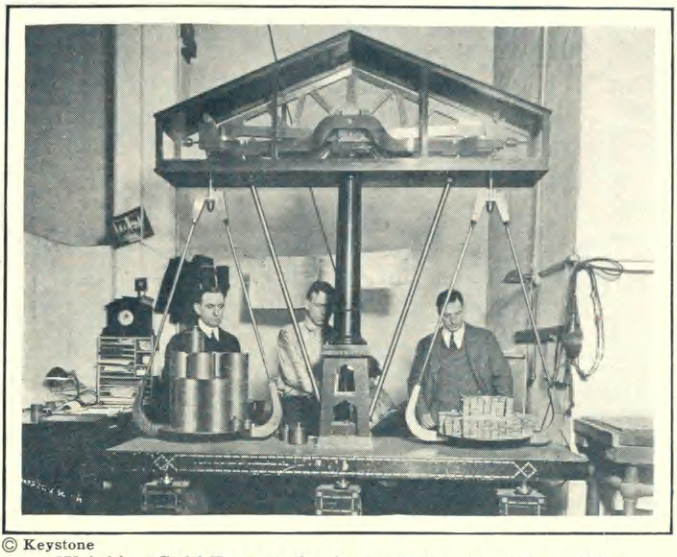
Rolling Gold into Strips

Gold bars are passed through rolls under tremendous pressure, from which it emerges in sheets of varying thicknesses. Jewelers, dentists, and others get gold in this form

Many varieties of the last-named process have been practiced at different times and in different parts of the world. The essential facts, common to all methods of cyaniding, are that fine particles of gold are dissolved in a weak solution of potassium cyanide, or sodium cyanide, in the presence of air or some other oxidizing agent. The gold enters into chemical combinations with the cyanides, from which it is subsequently separated by the addition of zinc to the solution, or by electrolysis. Another chemical process of extraction, which was in general use before cyaniding was introduced (in 1890), is still applied to



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Weighing Gold Bars at the Assay Office, New York City

The pile of weights in the left-hand pan of the scales just balances the smaller pile of gold bars in the right-hand pan

certain types of ore. In this process the ore is treated with chlorine gas; chloride of gold is thus formed, and the gold is removed from it by solution in water and chemical treatment.

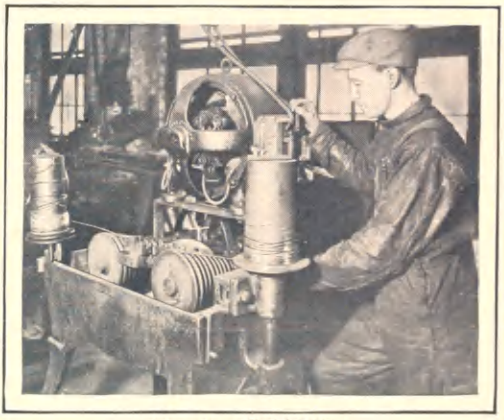
FAMOUS GOLD FIELDS

The story of gold in the United States began with the gold rush to the Pacific Coast in 1849. California still leads all other States in the production of gold, though Nevada, celebrated for its "Comstock Lode," rich in silver as well as gold; Colorado with its Cripple Creek; and South Dakota, which possesses the most productive individual gold mine in the country, are close rivals.

An interesting fact in connection with the discovery of gold in California by Marshall in the year 1848, is that a discovery of it had been made three years before that date by Mexican miners in the San Fernando Canyon, not far from Los Angeles. These miners extracted from a "placer" there about $100,000 worth of gold before the deposit was exhausted. In 1880, while engaged in the examination of the gold mines of California, I met Marshall, who accompanied me to Coloma and pointed out the spot, as nearly as he could identify it, where he discovered his first nugget of gold. Out of curiosity I panned some of the gravel there, and found a nugget weighing about fifty cents in value. This was the size of the first nugget discovered by Marshall.

The gold rush to the Klondyke, in northwestern Canada, began in 1897, and when the tide of invasion set in, the sensational history of the Californian gold fields was repeated. In recent years, the output of gold in the Klondyke has steadily declined, while the neighboring territory of Alaska has become one of the principal gold-producing areas of the world.*

* The United States purchased Alaska from Russia, in 1867, for $7,200,000. In 1919, Alaska produced about $10,000,000 in gold—some single years before then, it had produced twice that amount. Since 1880, when gold was first mined there, Alaska has produced more than $325,000,000.



Drawing Gold Wire

The metal is passed through a succession of dies, each smaller than the preceding one, until it is the thickness desired. Being the most ductile of metals, it is easily drawn while cold

Australia experienced an attack of "gold fever" not long after California. The first discovery was made in New South Wales, in February, 1851. Soon after, rich gold deposits were discovered at Ballarat, Victoria. Thirty years later important gold fields were opened in the vast, arid interior of western Australia, where remarkable engineering feats have been accomplished in piping water hundreds of miles for the use of the miners.

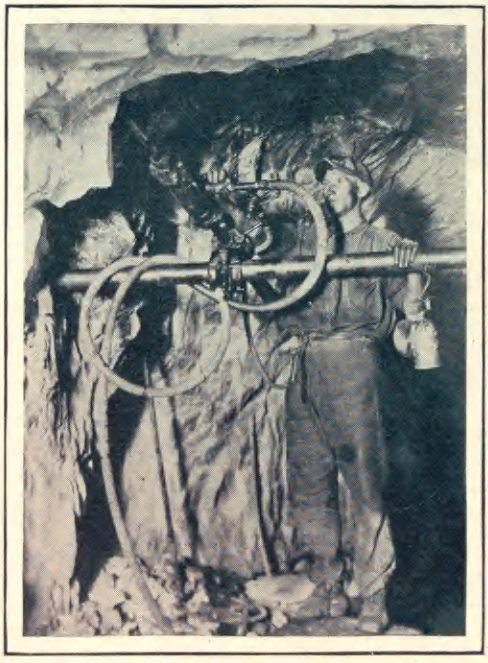
The most productive gold-mining region in the world, the Witwatersrand ("White Waters Range") in the Transvaal, began production on an extensive scale in 1887. The "Rand" is a tract forty miles in length, with the town of Johannesburg at its center, and this small area has, in some years, produced half the gold supply of the world. Some of the mines are of great depth. The ore is of much lower grade than that found in many other parts of the world, but this disadvantage is offset by its comparatively uniform yield and the great extent of the deposits—in which it is unique among the gold districts of the world. The total output of the Rand since 1887 is £564,000,000.

The world's output of gold in 1919 was £72,000,000 in value, of which £22,000,000 was consumed in industry by Europe and America. India absorbed that year £19,400,000, leaving about £30,000,000 available for money. India is a great sink for the precious metal; it is used there chiefly for decoration.

Pure gold is too soft for most uses in the arts. It is alloyed, usually with copper and silver, for making coins, plate, and jewelry. The properties of gold in an alloy may be expressed either as "fineness" (the amount of gold in 1,000 parts of alloy) or in "carats" (the carat being the twenty-fourth part of the whole).

Most of the gold used for industrial purposes in this country is brought from the United States mints and assay offices, after having been refined and assayed by the Government. Pure gold has a fixed value of $20.67 per ounce troy.

No other metal is so ductile or so malleable as gold, an ounce of which can be drawn into a wire *fifty miles long*. It has been beaten into leaves $\frac{1}{367,500}$ of an inch thick. Gold beating and various methods of gilding have made almost pure gold so commonplace a substance that we see it about us on all sides—on signs, picture frames, furniture, pottery, the bindings and edges of books, and even spread over broad architectural surfaces, such as the dome of the Library of Congress, in Washington.



The Real Producer

The man that, with drill and dynamite, wrests gold from the rock, in this instance deep in a mine of the Rand, South Africa

GOLD THROUGH THE AGES

HOW MAN FOUND AND USED GOLD FROM THE BEGINNING OF TIME

AN ALL-AMERICA VASE

Cast in California gold and embellished with stones from various States of the Union, the "Adams Vase," in the Metropolitan Museum, New York, is a superb example of modern goldsmithery

GOLD THROUGH THE AGES

BEHOLD one of the most compelling forces in the molding of human history; as strong as love or hate; not merely an aspect of ambition, but a key to ambition itself—Gold!

In all times and all languages the very name itself has been luring and commanding. We find it in the second chapter of Genesis, where we read of the land of Havilah, "where there is GOLD, and the gold of that land is good." The Old Testament is full of gold.

Courtesy the American Museum of Natural History

GOLDEN BOWLS

Made by ancient Peruvian craftsmen. Vessels like these are found by archeologists in tombs of the rich

Before leaving Egypt, the Israelites were enjoined by Moses to borrow jewels of gold from their neighbors—and they obeyed. Gold was to be the soul and substance of the Ark of the Covenant. The staves of wood were to be overlaid with gold; there was to be a mercy seat of pure gold; two cherubim of gold; four rings of gold; and bowls and a candle-stick of pure gold. When Moses delayed to come down out of Mount Sinai the people demanded of Aaron that he make them gods, and Aaron called for their golden ear-rings which he fashioned into a Golden Calf, and to which they made worship. When Moses saw this his anger waxed hot: "And he took the calf which they had made, and burnt it in the fire, and ground it to powder, and strewed it upon the water, and made the children of Israel drink of it." Yet, even after this destruction, enough gold remained to supply what was needed for the vessels and furniture of the Tabernacle. The splendor of Solomon's Temple was largely the result of the free use of gold. Also Solomon's throne was covered with gold. When the Queen of Sheba approached, it was flanked by soldiers bearing "two hundred targets of beaten gold; six hundred shekels of gold went to one target," and "three hundred shields of beaten gold, three pounds of gold, went to one shield." Many of the gifts brought by the Three Wise Men of the East who followed the Star of Bethlehem were of gold. From the beginning of the Old to the end of the New Testament gold maintains its sway. St. John, in Revelation, saw as one of the glories of the Heavenly City, a "street of pure gold."

Through all history, the Argonauts are the venturers, lured across strange seas and to remote lands by the magic whisper, "Gold!" Whatever the direction,—the Mexico of Montezuma, the Peru of the Incas, the California of the late forties, the Yukon, South Africa,—the spirit of the men and the impulse that has driven them have always been the same. The first Argonauts were a band of ancient Greek heroes who sailed in the ship "Argo" from Sicily to the further shore of the Black Sea to fetch the Golden Fleece—the magic covering of a ram—that was there guarded by a dragon in a grove sacred to Mars. Jason was the leader, and it was a task imposed on him in order that he might prove worthy of a throne.

Courtesy the American Museum of Natural History

ORNAMENTS OF GOLD

The Incas, prehistoric tribesmen of Peru, were noted for their skill in making objects of native gold

It was probably the heroic spirit of Jason that suggested the Order of the Golden Fleece, an order of knighthood of later times, founded by Philip the Good, Duke of Burgundy, and

THE ALCHEMIST

From a painting in the Brunswick Gallery by the famous Dutch painter, David Teniers the younger (1610–1690). The Alchemists studied and experimented to find a method of turning baser metals into gold

RUDOLPH II, EMPEROR OF GERMANY, IN THE LABORATORY OF HIS ALCHEMIST

From a painting by Vaszlav Brozik in the New York Public Gallery

Sovereign of the Netherlands, at Bruges, January 10, 1430. It was essentially Spanish and Austrian, and established for the glory of the saints and the protection of the Church. The insignia of the order are a golden fleece (a sheepskin with the head and feet attached) suspended from a chain of alternate gold and blue enamel flints; a red ribbon was afterwards substituted. There was a third Golden Fleece, for that was the crest of the Cloth-workers Guild of seventeenth century England, and of it Sir Thomas Lane as Lord Mayor of London in 1694 said: "The grandeur of England is to be attributed to its Golden Fleece, the wealth of the loom making England as a second Peru."

Gold and its lure, and the loose loves of gods and goddesses and mortals — these seem the main ingredients out of which was builded the mythology of the ancients. There was the Golden Apple of Atalanta. She vowed to marry the man who could outstrip her in a foot race. Hippomenes, who dared death by taking up the challenge of Atalanta, before starting, obtained from Aphrodite three golden apples, which at intervals in the race he dropped, and Atalanta, stopping to pick them up, fell behind. There was King Midas, of Greek legend, to whom was given the magic touch that turned all things to gold. His gift worked tragically, however, when he caressed his beloved daughter, and she became a golden statue in his embrace.

A FINE PIECE OF 13TH CENTURY GOLDWORK

The "Sampson" Reliquary in Rheims Cathedral, France, saved from the church's war destruction

THE GOLDEN AGE

Propertius, whose life covered roughly the fifty years preceding the birth of Christ, wrote: "This is indeed the Golden Age. The greatest rewards come from gold: by gold, love is won; by gold, faith is destroyed; by gold, justice is bought. The law follows the track of gold, while modesty will soon follow it, when law is gone"; and Diphilus, the Greek poet who flourished about 300 B. C., asserted: "I consider nothing is more powerful than gold. By it all things are torn asunder, all things are accomplished." Pygmalion, the King of Tyre, in order that he might seize treasures of gold, slew his sister's husband. Polymnestor, King of Thrace, killed Polydorus, his noble guest and the son of Priam, his father-in-law, in order to obtain possession of his gold. For love of gold, Eriphyle, a gentle girl of Greek mythology, betrayed her husband Amphiaraus to his enemy. Likewise, for gold, Lasthenes, in 348 B. C., betrayed the city of Olynthus to Philip of Macedon. The Roman girl traitor, Tarpeia, having been bribed with gold, admitted the Sabines into the citadel of Rome. Claudius Curio sold his country for gold to Caesar. Gold caused the downfall of Aesculapius, the great physician; he demanded too much. Marcus Crassus, through his eager desire for the gold of the Parthians, was completely overcome, together with his son and eleven legions, and became the jest of his enemies, for they poured liquid gold into the gaping mouth of the slain Crassus, saying: "Thou hast thirsted for gold, therefore drink gold." There was the famous Golden House of the Emperor Nero, which was erected after the fire of 64 A. D. on the Palatine Hill, Rome. In the courtyard stood the gilded, colossal statue of Nero, as God of the Son, crowned with rays, and about 120 feet high. Although the Golden House fell into decay soon after Nero's death in 68 A. D., some of the remains are still to be seen.

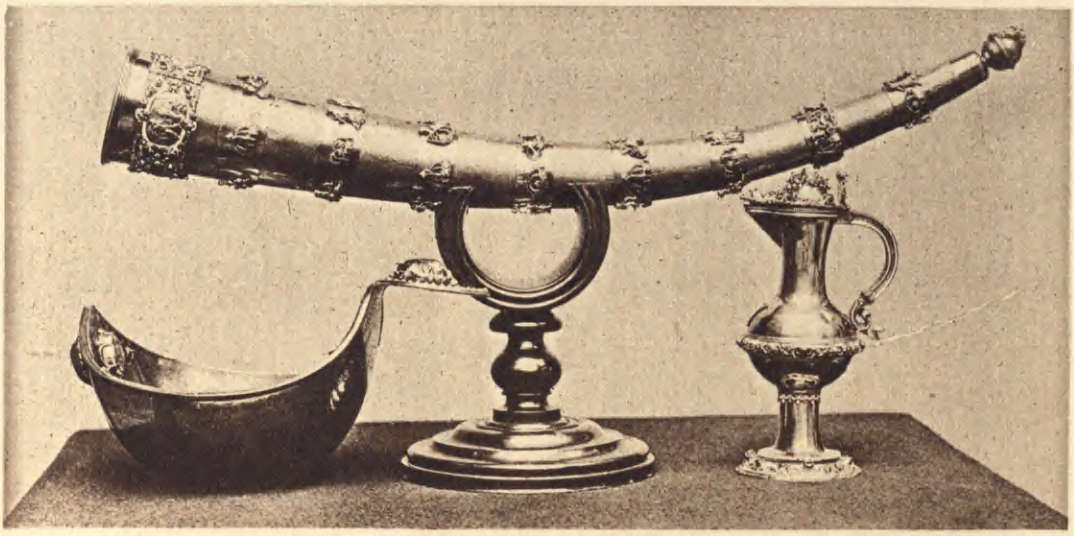
GOLD AS A SYMBOL

There is no other one symbol that has so pervaded the history of humanity as the wedding ring, that simple unadorned band of plain gold. With rich imagination, the Doges, rulers of Venice, used to toss a golden ring into the sea, thus consecrating the marriage of Venice and the Adriatic. Between the ring, and gold as the substance of it, there are many associations and conditions. In the Egypt of the eighteenth to the twentieth Dynasty, the heavy gold

Courtesy U. S. Bureau of Mines

HYDRAULIC GOLD-MINING, GLACIER CREEK, NOME, ALASKA

By this process, beds of gold-bearing gravel are washed down by the beating force of high-pressure streams of water



ANTIQUE GOLDWARE FROM THREE COUNTRIES
Russian water basin, Danish drinking horn, Italian wine flagon

ring, with the name and titles of the owner deeply sunk in hieroglyphic characters on an oblong gold bezel, was a mark of caste. In early Rome, though rings were generally worn, they were mostly restricted to iron. Ambassadors were the first who were privileged to wear gold rings, and then only while performing some public duty. Later, when the Empire had succeeded the Republic, the Emperor Tiberius made a large property qualification necessary for the wearing of gold rings; Emperor Severus conceded the right to all Roman soldiers. Gold was symbolic in the rings that, throughout the Middle Ages, were of such importance in religious, legal, commercial and private matters. For example, there was the Episcopal ring which was solemnly conferred upon the newly-made bishop, together with his crozier. In the time of Pope Innocent III. (1194) this was ordered to be of pure gold, mounted with a stone that was not engraved. Many of the gold wedding rings of the seventeenth century bore the motto, "*Mulier viro subjecta esto*"—"the wife will be subject to the man"—so the word "obey" was then worn on the finger through life. Poison rings shouldnot be overlooked. There was the poison ring by which Hannibal, the great Carthaginian leader, killed himself, and the poison ring of Demosthenes, the ancient Greek orator. Pliny, the famous Roman writer of the first Christian century, tells us of the theft of the gold treasure from under the throne in the temple of Jupiter, Rome, and records that the guardian who betrayed the treasure, to escape torture, "broke the gem of his ring in his mouth and died immediately."

A 10TH CENTURY GOLD ARM RELIQUARY
Repository of holy relics, object of pilgrimage

At every turn of history the magic metal, in some aspect or incarnation, reappears. When in June, 1520, King Henry VIII. of England, and Francis I. of France, decided to do fitting honor to the brief respite from the armed hostility that had raged practically for centuries between them, what more grandiose name could they give to the meeting place of temporary reconciliation than the "Field of the Cloth of Gold"? When a Pope decided to bestow a jewel upon the queen, who, in his estimation, had done the most for the advancement of the Church

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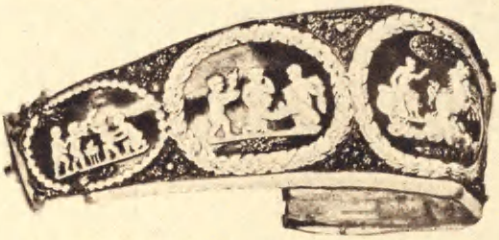
"GUGGIEVILLE," AT THE MOUTH OF BONANZA CREEK

Center of one of the most prolific gold regions of the Klondyke district, Yukon Territory. The gravel mounds are "tailings" piled up by monster dredges



Diadem of the Empress Josephine, wife of Napoleon

Shrine of the Bell of St. Patrick
in the National Museum, Dublin

Gold Embossed
Coronation Spoon
and Gem-set

In Metropolitan Museum of Art

Book of pure gold comprising two
Chinese c

Napoleon's Sword and
Scabbard

King of England's
Scepter

An altar of pure gold offere

GOLD—SOVEREIGN M

HISTORIC REL

rand two leaves, engraved in
rs

Gold beanpots given by Boston to Belgium's King and Queen

With which the King of England is anointed

Crown of Peter the Great of Russia

ruler of medieval France

Tiara made by Caradosso, famous Italian goldsmith, for Pope Julius II.

TAL OF THE WORLD

FROM MANY LANDS

during the preceding year, and when this gift took the form of a cluster of roses and buds on a single stem all worked out in pure gold, what could he more appropriately term it than "The Golden Rose?" East and west, north and south, with priest and king, with sanctuary and the palace of royalty, gold has ever and everywhere been associated. The Khalif of Bagdad was inaugurated by a golden veil strongly perfumed with musk thrown over his head. Ashanti is in West Africa, in the interior of the Gold Coast. There the Golden Stool of Ashanti is an ancient symbol of sovereignty corresponding to the throne, and a monarch in Ashanti is not enthroned, but "enstooled."

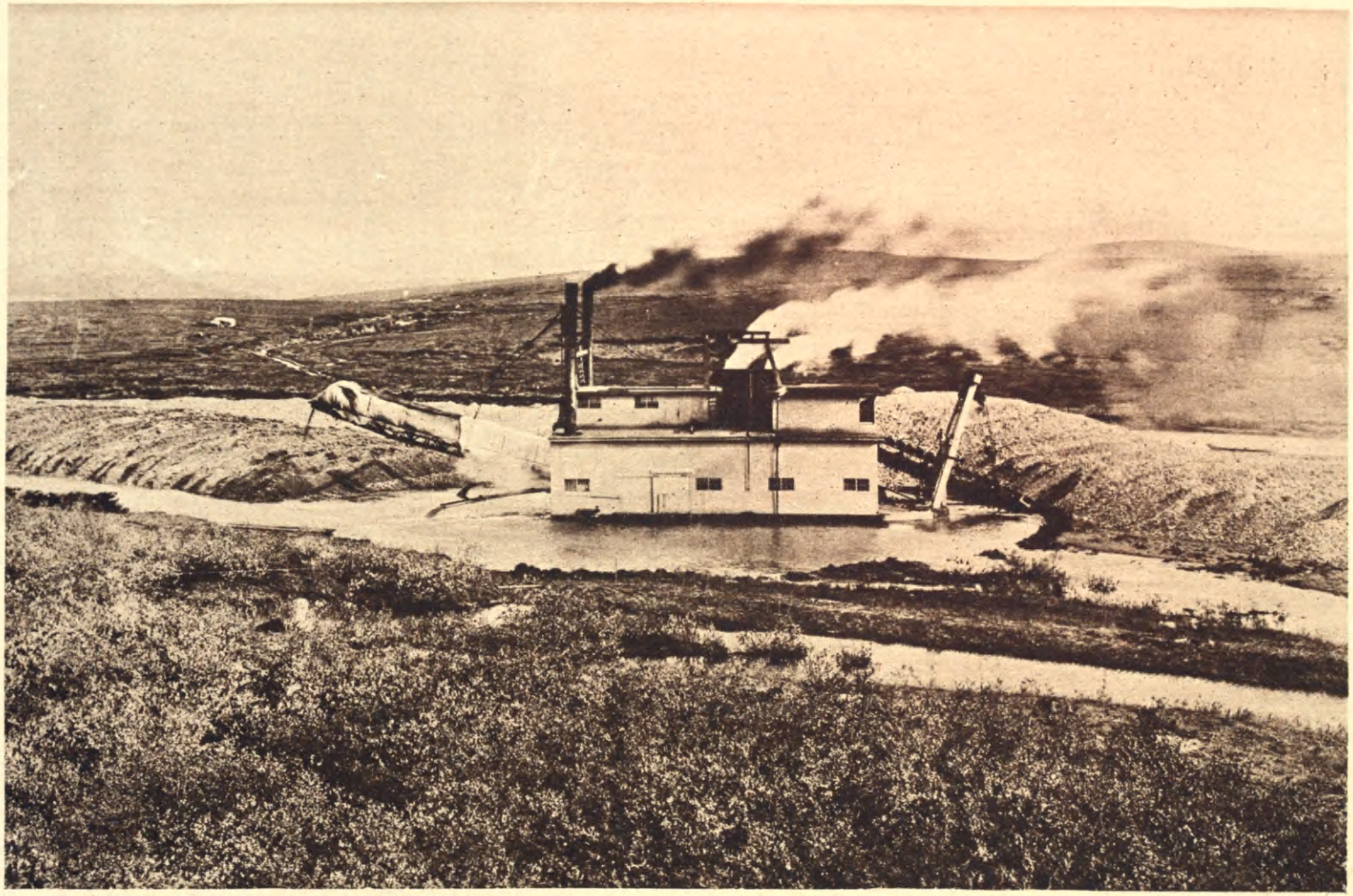
MODERN ARGONAUTS

It was the lure of gold, far more than any spirit of scientific exploration, that led to the opening up of the New World by European adventurers. When, in 1492, the first landing on the Western Hemisphere was made, gold ornaments were observed, which led to the belief that there was an abundance of the magic metal. When it was not found, the Spaniards leaped to the conclusion that it was being concealed by the natives, and resorted to the varied tortures of the age in the hope of extracting confession. In the following years the amount of gold obtained by the Spaniards was roughly to the value of five millions of dollars, and that was at the cost of many expensive expeditions, thousands of Spanish lives, and a million and a half of Indian lives.

But not Hispaniola, as the island of Haiti was once called, but Peru, was the real Eldorado of the Spanish Argonauts—and Pizarro was the Peruvian pioneer. Stirred by rumors of treasure in lands further south, Pizarro, who was serving under Almagro at Panama, ventured down the coast in 1526 as far as the equator, where he saw large cities and evidences of wealth. Almagro then returned for reinforcements, leaving Pizarro and some of his men on the little island of Gallo, where they suffered greatly. Over a year later two ships came to their relief—but the lust of conquest was too strong in Pizarro's breast. He turned to his followers and drew a line on the sand with his sword beyond which, he declared, lay labor, hunger, thirst, sickness and every kind of danger—but also the prospect of *glory and gold*. Thirteen men crossed the line with Pizarro; the rest went back to more congenial climes. Pizarro soon found evidence enough of vast wealth; then returned to Spain where he obtained a royal grant from King Charles V. Then, in 1531, he appeared again on the coast of Peru and found the ripe civilization of the Incas. By conquest and cruelties infinite in number—bad faith with the Incas and ruthless slaughter, Pizarro and his Spaniard followers ravaged the land for gold, amassed millions, and reduced the native population of Peru from 15,000,000 to a little more than 8,000,000, most of the survivors being in a practical state of slavery.

"INCENSE BOAT" OF SOLID GOLD
A rare example of Italian craftsmanship

The fate of Peru at the hands of the Argonauts was substantially the fate of Mexico. "I and my companions have a complaint, a disease of the heart, *for which gold is a sovereign cure*," said Cortes. Montezuma, the Aztec Emperor, had received him with friendly warmth, but the passions inflamed by the sight of gold swept away all of the gentler emotions. The gold exhibited sealed the doom of Montezuma and his



Courtesy U. S. Geological Survey

A GOLD DREDGE IN OPERATION, IN AN ALASKA MINING FIELD, ON SOLOMON RIVER

country. The surrender of a hundred thousand ducats of gold by Montezuma served only to whet the appetite of the insatiable invaders. Mexico, the ancient capital, fell after a siege of seventy-five days.

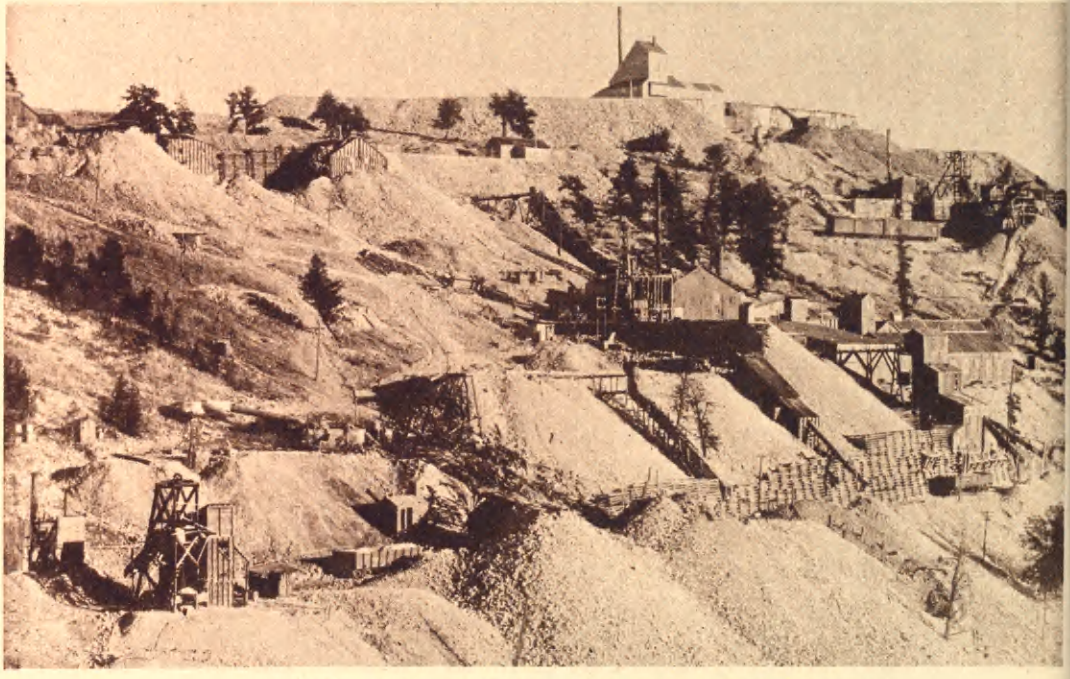
Cortes is said to have known of the existence of gold in Lower California, but for more than three centuries that knowledge was either forgotten or ignored. Then, one day in 1848, gold was found on land near John Sutter's mill, which was situated about forty miles from Sacramento. A new race of Argonauts then began. Like the palace of Aladdin, a crude, rough, fighting civilization came into being over night, and within thirty years the soil of California yielded up the magic metal to the approximate value of one billion dollars. That was an era of feverish excitement, bold enterprise, rough heroism and hardy endeavor that made thousands of men rich beyond their dreaming, and brought fame and enduring fortune to those great captains of mining industry, Fair, Flood, O'Brien and MacKay, and others. In 1859 came the discovery of the famous Comstock Lode in Nevada, rich both in gold and silver. The output of this great mine in thirty years (1860-1890) was $340,000,000.

MONSTER GOLD NUGGETS
Panned from Wade Creek, Alaska

The story of the Argonauts of California is substantially the story of the Argonauts of Australasia in the early fifties; of the South African Rand in the eighties; and of the Yukon in the nineties.

THE ALCHEMISTS

The wealth of Golconda, the Philosopher's Stone, the magic alembic—this was the goal of the dreamers of the ages. To transmute the baser metals into gold! Such was the aim of the Argonauts of the laboratory, the outstanding aspect of alchemy — which was to chemistry what



A HILLSIDE HONEYCOMBED WITH GOLD MINES
In the Cripple Creek District, Colorado. The entire region, covering an area of about six miles, at an elevation of 9,800 feet is a network of gold ore veins, which to date have yielded more than $300,000,000

TRADING GOLD DUST FOR GROCERIES, NOME, ALASKA

HOUSEKEEPING IN A CANADIAN GOLD CAMP
A well-to-do miner and his family

© Keystone View Co.

GOLD-SEEKERS CLIMBING "THE GOLDEN STAIR," CHILKOOT PASS, ALASKA

A familiar scene in the days of the Klondyke rush

astrology was to astronomy. Alchemy was a black art, born of a superstition that swayed king and peasant alike, an art that shrouded itself in mystery; and it appropriately came to an end, as far as enlightened countries are concerned, in the tragic story of James Price, a distinguished amateur chemist of the eighteenth century, and a member of the Royal Society of England. Price believed that he had discovered a powder that would change the baser metals into gold or silver. Between May 6 and May 25, 1783, he conducted a series of experiments that were apparently successful. Some of the gold produced was presented to George III., then King of England, and Oxford conferred a degree on Price. But further proof was demanded. The Royal Society called upon Price for a new test, and he was forced to attempt to make some more of the magic powder. He asked the members of the Royal Society to meet him in his laboratory. Only three members accepted the invitation, popular opinion having turned against Price. When the time for the experiment came, he raised a flask of laurel water to his lips, and swallowed the contents. The swift and deadly poison with which the laurel water had been distilled brought alchemy in England to a sensational end. Contemporaneous with Price was Semler, a distinguished professor at Halle, Germany. In the course of certain experiments with what he called the "Salt of Life," he was astonished to find gold. The announcement of this discovery stirred wide discussion. Eventually he learned that an over-zealous servant, thinking to please his master, had been slyly slipping small pieces of gold leaf into the mixture. Semler confessed his error, and with that confession, disappeared the last pretension to alchemy in the German states.

RHINE GOLD

Richard Wagner made the lust of gold the motive of his great four-part musical

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MAN AND BEAST TOIL IN A COLORADO MINE TO DIG AND CARRY LOADS OF GOLD-LADEN ROCK

epic drama entitled "The Nibelungen Ring." Gold, lying at the bottom of the Rhine, was doing no harm, and the world was at peace. Guarding the Rhinegold were the Rhine daughters. Alberich, the Nibelung dwarf, King of the Underground, covets the gold. "Hark, ye floods! Love I renounce forever for this!" he cries, and seizing the gold, disappears with it into the depths of the earth. Alberich, drunk with the power that gold confers, defies the world. Then follows an era of mischief for gods and men—all due to the curse that follows the Nibelung's ring of gold. Man fights and is slain; man loves and loses; the best that is in man is betrayed and destroyed. Wotan himself, ruler of the gods, sees that the twilight has come! Then, at last, the Rhine overflows, the Rhine-daughters, borne on the flood, reclaim the gold—and the curse is ended.

GOLD FEVER

The great gold rushes of modern times have revealed many Alberichs—frantic fortune-hunters eager for a share of the glittering dust. Ridgwell Cullum gives us a vivid account of the frenzy of gold-seeking in his story, "The Golden Woman."

"The tramp gold-seeker," he says, "is a creature apart from the rest of the laboring world. He is not an ordinary worker, seeking livelihood for a regular return from his daily effort. He works under the influence of a craze that is little less than

disease. He could never content himself with stereotyped employment.

"His pursuit of gold has a deadening effect upon all his finer instincts. Civilization is forgotten, buried deep beneath a mire of moral mud, accumulated in long years of association with the derelicts and hard cases of the world. His joy lies in his quest, and his dreams of fortune. Every nerve center is drugged with his lust."

The discovery of bits of glittering yellow quartz in a new and untried territory sends rumor flying like wildfire, and the spot soon swarms with tramp gold-seekers, with hungry eyes and claws outreaching, ready to scratch and dig the soil like famished dogs. At first, a whirlwind of joy. The gold-seekers gather, and the soil gives up its yellow harvest. Then by degrees—at first hardly noticeable—there comes a change.

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"GOLD-BEARING BURROS"
Carrying the precious ore from mine to mill

Gold, and the hope of more gold, is no longer satisfying in itself. They want *realities*—they want what *gold can buy*.

To want the realities—with their raw, unrestrained passions, and the means of obtaining them at their disposal—is to demand them. They want a town. They want a saloon. They want a gambling hall. They want all the organized means of satisfying appetites that had, all too long, hungered for what they regarded as the necessary pleasures of life. They want a means of spending the accumulations gleaned from the ample purse of Mother Nature. And, without delay, they set about getting these things. The way is easy. It needs but one mind, keener in self-interest than the rest. That mind sees in the situation a far greater gold-mine than his own claim could ever yield him, and he promptly lays his plans. He gives the gold-seekers all the things they want in return for their gold—a saloon, store, hotel, and a dance and gambling hall. A rush of trade begins, the camp is soon in high revelry, and gold is fast pouring into the trader's coffers. A change, almost magical, occurs. Other traders come to spy out the land. Loafers, bad-men, and gamblers, suave and ingratiating, foregather and start the ball of high stakes rolling. And, in their wake, comes all that class of human carrion that is ever seeking something for nothing. The final brand of lawlessness is set on the camp by the arrival of jaded, painted women, who haunt the drinking, gambling and dancing halls.

It is all the simple, natural evolution of a gold-crazed mining community—a place where human nature runs wild. The story has been told a thousand times wherever the earth's yellow treasure is found. The land becomes infected, and breeds a fell disease that undermines man's moral fiber and arouses dormant selfish passions that lead to madness. It is called "Gold Fever."

WHAT EDISON THINKS OF GOLD

"GOLD makes pretty jewelry and picture frames and is used effectively for filling teeth. Otherwise it is an almost wholly useless substance. Yet we hold it as the standard of all values."

That is Thomas A. Edison's valuation of gold. The famous American inventor has never believed in the gold-standard idea. In an interview for The Mentor he told why.

"To me," Edison said, "the gold-standard system is largely fiction. Banks have a gold reserve of, say, fifty per cent of their note issue. This is fifty per cent alleged real reserve and fifty per cent pure gamble, the banks taking the gambling chance that the note holders will not call on them all at one time. Finally, if things go wrong, and the note holders begin to demand the fifty per cent gold, the banks fall back upon the credit of the Government and the merchants' notes through the Federal Reserve.

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Melting British Gold

Reducing a shipment of English money at the United States Assay Office at New York. The amount of gold in the metallic alloy is certified by the government officials

"It seems absurd to me that all our values should be based on boxes of metal in any treasury. It is an absurdity, but everyone has been educated to believe that absurdity is common sense.

"Before the invention of credit money, there was gold enough to function perfectly with the small amount of business that was transacted. Now it is otherwise. Just think of using gold as a standard of value in the highly organized financial and commercial system at present in vogue throughout the world! Under the present system our Government certifies to the amount of gold in disks and bars of metallic alloy. Then they are packed into boxes and kept traveling continuously all over the world—New York to London, London to Bombay, back to New York, and so on. The principal quantity we keep in vaults as an alleged support to our circulation medium. Other governments follow the same program.

"I should think that values should be based not upon supplies of gold in treasury vaults —for gold is a commodity and must fluctuate—but upon the wholesale price of the necessaries of life; that is, production cost plus a reasonable profit at the point of production, as, for instance, the cost of coal at the mine or that of certain basic manufactured articles at the factory.

"Why should not all the governments of the world come together and establish an international index of value for exchangeable necessaries of life in the countries producing them. Then the peoples of the different nations and the populations within each nation could do business by the infinitely simple system of plain barter. You have so much oil; well, I have so much wool or woolen goods. I want your oil. You want my wool or cloth. We might be governments or individuals; it would not matter.

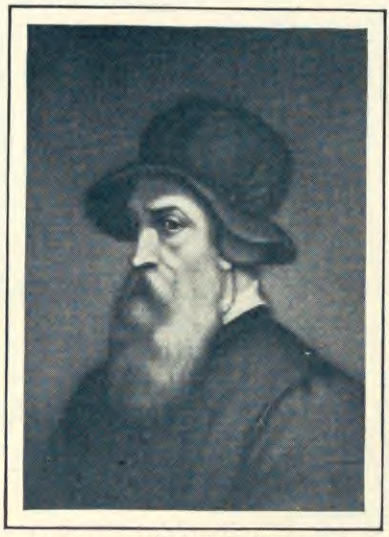
"A great amount of research and other work would need to be done before this system could be established, because of the different tastes and needs of the people. But what is better money than that based on certified commodities in government warehouses and merchants' short notes for goods actually sold and discounted by a bank taking currency issued by the Federal Reserve Bank, with notes as security?

"We need not worry very much about a standard for super-luxuries, but the prices of absolute necessities ought to be fixed. As it is, no man can tell how much food, clothing, pleasure, education, his labor will secure."

CELLINI, ARTIST AND ASSASSIN

"LET me but finish this vase, and I will spit him through with my sharp-edged blade—" That was the sort of person Benvenuto Cellini was—as renowned for his man-killing as he was for his art.

The life of the most famous goldworker began in the year 1500, when Italy, the country of his birth, was at the peak of production in fine arts and scholarship. This was also the time, more than any other in the history of Italy, that favored outlawry, violence, and sensual living. Cellini was both a scholar and a *bravo*. He wrote one of the best autobiographies in literature, and he was without doubt the most prodigious braggart that ever lived.



Benvenuto Cellini (1500—1571)

To tell the truth, his egotism was usually justified. He excelled in everything he set his hand to. Enameling, for instance: "To this branch too I devoted myself with all my strength. In spite of its great difficulties, it gave me so much pleasure that I looked upon them as recreation; and this came from the special gift which the God of nature bestowed upon me, that is to say, a temperament so happy and of such excellent parts that I was freely able to accomplish whatever it pleased me to take in hand. The various departments of art which I have described are very different one from the other; I strove with all my power to become equally versed in all of them; and I shall demonstrate that I attained my object."

In the Metropolitan Museum of Art

Cup of Gold and Enamel

One of the few authentic Cellini pieces in existence. It was purchased by the late Benjamin Altman of New York from the Prince de Rospigliosi, who inherited it from his grandfather

Cellini's life story reveals him as artist and brutal ruffian, and gives a lively and truthful picture of medieval times in Europe. "Nowhere else," says John Addington Symonds, translator of the autobiography, "do we find the full character of the epoch so authentically stamped. That is because this is the plain utterance of a man who lived the whole life of his age."

Cellini caught the popular imagination, and had the friendship of kings and scholars. On the occasion of one of several of his murders committed in the streets of Rome, he was pardoned by Pope Paul III, who, in reply to a protest, declared, "You do not understand the matter as well as I do. I must inform you that men like Benvenuto, unique in their profession, are not bound by the laws."

That was exactly what Benvenuto thought. He was complacently sure that he was under the special providence of a merciful God, with the right to act as he chose, without regard to opinions or rules. Time and again he ruined excellent prospects by indulging in some outrageous crime or folly. But he was proud to be called "a terrible man," and never lacked excuse for any deed he chose to do. "My Benvenuto," he quotes a friend, "if you had an affair with Mars, I am sure you would come out with honor, because, through all the years that I have known you, I have never seen you wrongfully take up a quarrel."

One of the affairs

he relates with great gusto had to do with a jeweler named Pompeo. One afternoon, while Cellini was sitting in the street with several of his friends, Pompeo passed with ten men "very well armed." He stopped as if to pick a quarrel. "When Pompeo had stood there time enough to say two Ave Marias, he laughed derisively in my direction. My companions wanted to begin the fray at once; but I told them hotly that I was quite able to conduct my quarrels to an end by myself, and that I had no need for stouter fighters than I was. . . . Now, there was among them my dearest comrade. He was well aware that my forbearance had not been inspired by want of courage, but by the most daring bravery, for he knew me down to the bottom of my nature." Pompeo continued down the street and entered an apothecary shop. At the corner Cellini caught up with him. "His *bravi* had opened the ranks and received him in their midst. I drew a little dagger with a sharpened edge, and, breaking the line of his defenders, stabbed him just beneath the ear. With my left hand I plucked back the dagger, and with my right hand drew my sword to defend my life. . . . All my friends agreed in blessing my hands (that is, approving his handiwork), judging that Pompeo had done me too great and unforgivable an injury, and marveling that I had put up with him so long."

"Perseus with the Head of Medusa"

When this masterpiece in bronze was set up in the Loggia de' Lanzia, on the great piazza of Florence, Cellini relates, "a shout of boundless enthusiasm went up in commendation of the work." For days, poets vied in composing sonnets of praise which they nailed to the sculptor's doorposts

In similar manner, Cellini, ingenuous egotist, was able to justify everything he did.

The master goldsmith was good to his family, and was a devout churchman. He liked to read the Bible and compose psalms. He spent two years in a monastery. But after he had left off the garb of a monk he returned to the reckless living of his youth. His life was an extraordinary mixture of piety, violence, conceit, generosity, caprice, audacity, and imprudence.

He was always in the midst of a whirlpool of events. He touched the life of the period at every point. He was imprisoned for immorality, and another time for theft; he fashioned ornaments of exquisite beauty for which nations vied; he loved, and boasted basely of his loves; once he sacrificed a position of great luxury and independence to serve a widowed sister and her six daughters; it was he that killed the Prince of Orange and the Constable of Bourbon when they laid siege to Rome. Of villainy and violence he was so often convicted that innumerable pages of his biography are consumed in vaingloriously reciting shameful episodes.

Though the first goldsmith of his time, only a few examples of Cellini's art survive. What he lacked in delicacy of design he made up in invention and fine workmanship. An embossed and enameled gold salt-cellar, now in the Museum of Vienna, is the most precious example of his craft that remains.

He worked from boyhood to middle age as a goldsmith. Then he determined to try his hand at making statues. Today his fame as a sculptor rests on the coarsely conceived but brilliant and picturesque "Perseus," which occupies a place fronting the great plaza at Florence. This celebrated bronze is in striking contrast to the poniards, vases, medals, girdles, ewers, of finely wrought metal which first won him his reputation.

Cellini began to write his biography in Florence, where he had come into the world (a "welcome son"—Benvenuto) fifty-eight years before. His father was an engineer and draftsman, who had equal skill in making musical instruments and "machines for lowering bridges and working mills." He wanted his son to become a flute player and composer. However, Cellini the younger did almost everything in his life except play the flute adeptly and compose music. *Gene Berton.*

SOUTH AMERICA'S STONE FOREST

HIGH in the Andes—three miles above sea level, to be exact—is a "Garden of the Gods" that surpasses the famous North American natural park in Colorado. It is but a short ride from a railroad, yet it is comparatively unknown to travelers, for few care to risk soroche, mountain sickness, Nature's price of admission.

It is easier to talk *of* an altitude of 14,500 feet than to talk *in* it. The lungs must work nearly twice as fast as at sea level to obtain the amount of oxygen necessary to life. The heart must pump faster. Only the lung-strong and heart-strong can endure the long railroad journey over the Andes from Lima, on the coast of Peru, to the village of Carhuamayo, the starting point of the trip to the South American "Garden of the Gods."

Soroche is more feared than seasickness; it cannot be reckoned upon. Escape from it on one trip is no assurance that the next one will not be almost unbearable. Nor does a bad first trip indicate that the second will be much better. Travelers boast of "sea legs," but never of "mountain legs." On the trip up, everyone feels some effect of the altitude; at 11,000 or 12,000 feet a headache; at 13,000 many are nauseated; at 14,000 the breath comes quickly, the heart beats violently, and an imaginary band tightens around the head; at 15,000 feet an attempt to rise in one's seat ends in complete collapse, often in a fainting spell; and at the summit, 15,685 feet, one is only able to gasp in a breathless void.

"Royal Arch"

A Stone "Poplar"

Fifteen hours after leaving Lima, Carhuamayo is reached, and one is just able to stagger to a little Spanish hotel, fifty feet from the railroad station. Although the lower level, 14,000 feet, is a great relief after the trip over the summit, three days must pass before walking is a pleasure. After a week, a short horseback trip is endurable, and in another two weeks the trip to the stone forest can be made with reasonable assurance that only the milder effects of soroche will be experienced.

In the dry season, May to October, the sun is shining brightly at nine o'clock. Across the pampa, distinct in the clear Andean air, what appears to be a gray forest can be seen distinctly. But trees are impossible at this height, several thousand feet above the timber line. Not a bush intervenes, nothing

"Monarch of the Forest"

Giant "tree" in the "forest" high in the Andes. Scientists cannot be sure how these queer monuments were produced —by wind or volcanic action

bigger than a blade of thin grass on this vast desolate plateau. Fifty miles to the north and west, on the edge of it, rise the snow-capped peaks of the Andes. The huts of Carhuamayo, an occasional flock of sheep, and the piercing shriek of the locomotive whistle echoing in the emptiness are the only indications of life.

Acclimated now, horse and rider feel the invigorating effect of the mountain air, but the shortest gallop leaves both winded. Although noon is three hours off, the thermometer registers seventy degrees.

There is no trail to follow, there is no need for one. The stone forest is always in sight and the direction is straight ahead. A herd of llamas passes, driven by a little Indian boy, on their way from a copper or vanadium mine in the distant hills to the smelter, thirty miles away. This distant cousin to the camel is the express system of the Andes, or, rather, the parcel-post system, for fifty pounds is the limit load for each beast. If any more weight is added the animal refuses to move.

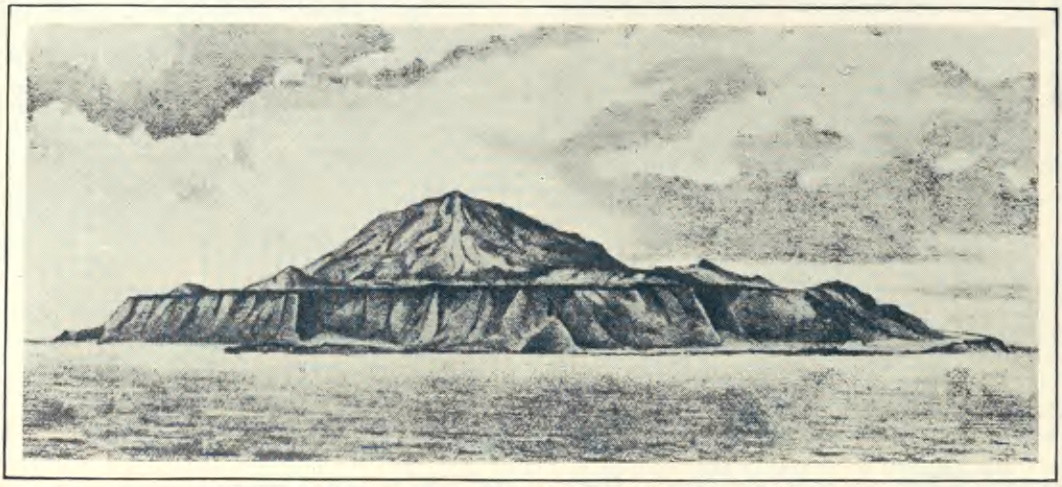
At the end of an hour's riding the forest seems no nearer; distances are deceiving in the clear air. This leg of the trip is broken by the excitement incident to fording the Rio Blanco (White River) which runs one hundred feet below the level of the pampa. The horses slide down the steep bank into the icy water, fairly swim across, and scramble up the opposite side.

Now the gray mass ahead is resolving itself into the semblance of a ruined city. The illusion of ruins passes on arrival at the forest. Before one is a labyrinth of thousands of uniformly gray rocks, formed by nature into a thousand diversified shapes. Many are over seventy feet high and delicately balanced. One, pencil-shaped, is set on a frail, tapering point. Arches, tunnels, and ditches have been channeled through the rock by the same giant force that set the rock pencils on end. Most curious of the stone "trees" is the "Monarch of the Forest," a giant mushroom with a comparatively slender base.

Scientists have not yet decided whether or not this geologic freak is the result of volcanic action or of the thousands of gales and storms that have battered and eroded the rock surface. Whatever its origin, it is a natural wonder that is well worth the discomforts attendant upon seeing it, but until the doctors prepare some easily swallowed anti-soroche pills, it will never be a resort for the average tourist. *E. M. Barnett.*

Forty-foot Natural "Lookout" Hole in the Stone Forest of Peru

A PEOPLE WITHOUT A BOSS



Where the Bossless People Live; the Island of Tristan da Cunha

HALF-WAY between Africa and South America, in the middle of the Atlantic Ocean, live a people without a boss. Their country is the Island of Tristan da Cunha, named after himself by the Portuguese explorer that discovered it four hundred years ago. A volcanic peak, eight thousand feet high, tops the island; at its base are tall cliffs that rise like gray tombstones over the graveyard of ships. Driving down to the Antarctic, storms sweep ships impotently before them on to the rocks of Tristan da Cunha and the adjacent Nightingale and Inaccessible islands. Most of the islanders were unwilling visitors; they had no choice, but reached the forbidding shores in torn and dripping clothes, or no clothes at all—sailors saved from shipwreck.

A century ago, England sent troops there to watch for ships that might try to rescue Napoleon, who was confined on St. Helena, a thousand miles away. When the troops were recalled, William Glass, a soldier, and his wife asked to stay. As years passed and the toll of wrecked ships grew, Glass, his family, and the castaways became a British colony. Wives were imported and an annual mail service supplied. The mail service was discontinued, however, when it was discovered that scarcely a dozen pieces had been delivered in a year. A telescope and a set of flags are now the sole means of communication. At the cry of "Sail ho!" boats put to sea and cross the dangerous waters to barter vegetables, mutton, and wildcat skins for flour, seeds, rat poison, needles, cloth, and candles; and to hear the news and perhaps get mail. Rat poison is an important import, for the island swarms with rodents from stranded vessels. Wrecks are common.

Actually, none of the colonists need stay. The British have repeatedly offered to move them to a friendlier country. Some left, but returned later, bringing families with them to share the easy-going life. So the population fluctuates. At present there are about one hundred men, women, and children living there. They represent several nationalities; but English is the language spoken.

Most of the wives are dark-skinned. The only woman contributed to the colony by the sea was an East Indian stewardess from Calcutta.

Houses in the village of Edinburgh, at the foot of the mountain, are strongly built to resist storms, and are furnished with cabin doors, wardroom tables, copper pots, and other salvage.

The refugees have no civil or military head, no council or court of law. Each man is his own boss. For sixty years, Peter Green, a Dutch sailor, acted unofficially as judge, but when he died in 1902 no one succeeded him. Crimes and disputes are rare. On the whole island there are probably not twenty-five dollars in currency. Crops and goods are equally shared, and when the population is increased by wreck, the cost of maintaining the newcomers is cheerfully divided among all of the settlers. *Rhoda Lee Dodge.*

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JIM SMILEY was "the dangdest feller for bettin'." He'd bet on anything—even offered to bet the Parson that his wife wouldn't get well. And it was through his love of "bettin'" that he came to catch "Dan'l Webster" and educate him. "Dan'l" was a mighty good frog and could outjump any frog in Calaveras County. But once he fell down and his fall was enough to make angels weep.

"One—Two—Three—GIT!" said Jim—but something was the matter with "Dan'l." He didn't *"git."* And then—but to really enjoy the history of this "notorious frog" you must read it in Mark Twain's own words.

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STEPHEN LEACOCK
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THE FACTS ABOUT "THE BLUE BOY"

"THE Blue Boy," one of the best known pictures of the famous British artist Gainsborough, is now in American hands. Henry E. Huntington, millionaire collector of fine books and works of art, is the buyer; the Duke of Westminster, the seller; and the price $640,000—the highest paid in the record of modern art purchases.

The tradition in English painting is that Gainsborough painted "The Blue Boy" as a reply to a statement made by Sir Joshua Reynolds. Reynolds' statement was: "It ought, in my opinion, to be indispensably observed that the masses of light in a picture be always of a warm mellow color, yellow, red, or a yellowish white; and that the blue, the gray, or the green colors be kept almost entirely out of these masses, and be used only to support and set off the warm colors; and, for this purpose, a small proportion of cold colors will be sufficient. Let this conduct be reversed; let the light be cold, and the surrounding colors warm, as we often see in the works of the Roman and Florentine painters, and it will be out of the power of art, even in the hands of Rubens and Titian, to make a picture splendid and harmonious."

It is said that Gainsborough's reply to his great fellow artist was "The Blue Boy"—a mass of central blue, surrounded by warm colors—just what Reynolds had said could *not* be done. It is likely, however, that tradition has placed the cart before the horse. It is probable that "The Blue Boy" was painted before Reynolds' statement was uttered, and that the statement was provoked by seeing "The Blue Boy." Gainsborough worked with the same scheme of color in his portrait of Mrs. Siddons. He afterward reversed it in his portrait called "The Pink Boy."

$640,000 for This Painting

An ironmonger's son was the model; the color scheme revolutionary, and a famous artist of the day said that it had no permanent value as a work of art

"The Blue Boy" was supposed to portray, not a royal nor a noble boy, but young Jonathan Buttall, the son of a wealthy ironmonger. It is said to have been painted in 1779, but it probably was done nearer 1770. It is not a satisfactory piece of color, and, instead of justifying Gainsborough, it seems to have justified Reynolds. It is, however, a clean piece of painting rather luxurious in execution, and done with a well-filled brush.

There are three versions of it in existence; the one belonging to the Duke of Westminster is undoubtedly the original picture. At last accounts, its surface was dirty, much darkened, and rather greenish in color. It will probably be cleaned up now, and show its original color qualities. A second version of the picture was in the possession of the late William H. Fuller, in New York, some years ago. It was believed to have been a copy of the Westminster picture made by the painter John Hoppner, who certainly had the Westminster picture in his possession at one time. The Fuller picture was an excellent, free, clean copy, and, in many respects, quite as good as the original.

The third version belongs, or belonged some years ago, to the Comte de Castellane.

The fine quality of "The Blue Boy" consists not so much in its being blue as in the fact that it is a figure well placed, well presented, and notably conceived. The fine sensitiveness of Gainsborough shows in the whole attitude and look of the boy. Whatever young Buttall was, the great painter has endowed him with nobility.

Although an enormous price has been paid for "The Blue Boy," it does not follow, necessarily, that it is Gainsborough's greatest painting. It is, however, beyond question, one of his most notable and distinguished works. *Gene Berton.*

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"I began to wake up"

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The letter is too long to quote in full; but you will note that the Institute representative who accepted this man's enrolment was not satisfied to let the matter rest there. He counseled with him and he advised him step by step just how to make his training count. *This* is what Alexander Hamilton Institute *service* means; it is one of the reasons why thousands of successful executives (24,000 of them corporation presidents) are so enthusiastic in their praise of the Institute's value in their careers.

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IT WAS LEGAL TO BEAT A WIFE

SOME centuries ago a husband was permitted by law to beat his wife. Sentimentally woman's power was great; socially it was small, and legally it was nil. This was in the Middle Ages, when a Scotch law held that a woman who committed trespass without the knowledge of her husband was liable to be chastised "like a child under age;" and there was also a law that no man should beat his wife with a stick thicker than his little finger.

It is difficult to define exactly the character of the medieval lady, for from the time of Charlemagne until the end of the sixteenth century she was the subject of exaggerated devotion and unbridled satire. Roswitha, a gifted nun of the tenth century, who wrote plays, and Christine de Pisan, a poet of the fifteenth century, give pictures that show she had but two choices in life, matrimony or the cloister.

Great Lady of the Past

Noblewoman of the 15th century wearing the headdress that was the target for critical writers of that period

The second was, perhaps, the more enviable fate of the two, certain records indicate. For example, the nuns of Great St. Helen's, London, were rebuked by a fifteenth-century bishop for hemming their veils with gold and keeping lapdogs in their cloisters—a more amusing life, probably, than that of the married gentlewoman immured in a marsh-girt stronghold, while her lord rode forth in pursuit of the wild boar or was off crusading!

The greater part of the medieval lady's time and intelligence was devoted to works of piety. Almsgiving was strongly encouraged by the church and diligently practiced by the faithful. There is a French legend which speaks of a certain Countess of Mans who cared for thirty fatherless children, and who at her death was seen surrounded by a cloud of light in which were small children.

The medieval lady's great fault, it seems, was her talkativeness. The Knight of la Tour-Landry, in a book which he wrote for the instruction of his motherless daughters, tells how an English king sent an ambassador to choose a wife for him from among the daughters of the King of Denmark. Though the oldest was the fairest, "she winked oft and spake before she understood what was said to her, and ever beat her eyelids together," and was therefore rejected by the ambassador, as was the second daughter, who had "marvelous much knowledge;" the third, who was less fair, but better behaved, received the crown, to her own astonishment and that of her sisters.

Another tale of the old knight's tells of a young lady whose face was blue by reason of the scantiness of the gown she wore one winter day, and was rejected in favor of a less comely sister who was warmly clad and ruddy of hue.

Insincerity was the other great fault of the medieval lady if the fierce attacks of the satirists of the times are indicative of her character. An old bard sings, "There were three wily, three wily there were, a fox, a friar, and a woman." Woman was depicted as a chattering, fickle creature, and her grotesque headdress, particularly, called forth the anger of monkish chroniclers.

If these things suggest a somber picture of married life in the Middle Ages, there are many records of happy marriages. Richard II left instructions in his will that on his monument he and his wife should be represented with interlocked hands; and no woman was better loved than "Blaunche the Duchess," the first wife of John of Gaunt; two outstanding examples from history.

Do You Make These Mistakes in English?

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MANY people say, "Did you hear from him today?" They should say, "Have you heard from him today?" Some people spell calendar "**calender**" or "**calander.**" Still others say "between you and I," instead of "between you and me." It is astonishing how many people use "who" for "whom" and mispronounce the simplest words. Few people know whether to spell certain words with one or two "c's" or "m's" or "r's," or with "ie" or "ei," and when to use commas in order to make their meaning absolutely clear. And very few people use any but the most common words—colorless, flat, ordinary. Their speech and their letters are lifeless, monotonous, humdrum. Every time they talk or write they show themselves lacking in the essential points of English.

Every time you talk, every time you write, you show what you are. When you use the wrong word, when you mispronounce a word, when you punctuate incorrectly, when you use flat, ordinary words, you handicap yourself enormously. An unusual command of English enables you to present your ideas clearly, forcefully, convincingly. If your English is incorrect it hurts you more than you will ever know, for people are too polite to tell you about your mistakes.

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THE OPEN LETTER

ONE day, some time ago, an old friend who had been away for some years, came in to give me a greeting. He had been adventuring in the gold fields of the Far West—where he had roughed it through several seasons, digging for "pay dirt." He had the look of experience, if not of wealth.

When I asked him what luck he had found, he smiled grimly and pulled several rough pieces of conglomerate stone from his pocket, which he dumped down on the desk in front of me. They were varied in color, but all had bits of glittering yellow in them.

"Gold ore?"

My friend nodded. I studied the unshapely lumps of stone carefully to see if I could find in them the magic that made men lose their heads.

"Now," my friend said, "pick out the pieces that attract you most—the richest bits in the lot."

I did so without hesitation.

"These for me," I said, selecting three twinkling bits of ore.

My friend again smiled grimly.

"Fool's gold," he observed.

"What do you mean?"

He answered, "What you have selected is iron pyrites. Many a time I've seen it in a stream where the water washed it clean, and I've thought it the real thing. Iron pyrites —that's what it is, a cheap and common mineral. It certainly looks like gold—but it isn't. That dirty red piece of stone you have in your other hand—the one with a dull glow in it—is real gold ore. What you picked out is called 'fool's gold.'

★ ★ ★

Those glittering bits of stone are on my desk before me now. Why aren't they a satisfactory substitute for real gold? They shine as brightly, and they would look about as well in a ring or on a crown. Why could we not accept a substitute for gold? We accept substitutes for almost everything else—even for our good old golden butter.

But we accept no substitute for pure gold, because gold has become, in the course of history, a recognized and established standard of value. Other standards have been tried, but they rest on credit, confidence, and the good faith of man—and, sad to relate, good faith among men is not universal, nor above question. The only unquestioned standard of value is pure gold—so men and nations deal finally in that.

★ ★ ★

In a world where the spirit of idealism prevails, why should a material thing, gold, be the only standard of value that mankind recognizes? We have heard it said of certain men that "their word was as good as gold." Why shouldn't good will and friendship and integrity be just as reliable as gold? Good will and friendship, *when true*, are finer than the purest gold—but how shall we know when they are true, how can we appraise them justly and accurately? Only the test of time can tell.

In common usage to-day, the term "friend" is just as uncertain in value as "gem"—and often as deceiving as "fool's gold." Friendships are easily formed, and they are full of promise when formed. We all want to be happy and make the most of life—and we regard good-fellowship as an essential part of happiness—so we set out to "make friends" quickly. Anything that looks like friendship is welcome. Curious! We will accept nothing in our business dealings but pure gold, or its equivalent in value; but in friendship "fool's gold" will pass current with many—at least for a while. Time then proves that what is so quickly and easily found is not true and sound. Bearing the gentle name of "friendship," it turns out to be simply a cheap exchange of iron pyrites.

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It seems to me that a sensible, practical resolution for one to make at the beginning of a new year would be to "take stock" carefully of one's relations with one's fellow beings, so that one might be able to see clearly the difference between the pure gold of a real, vital friendship and the thing called "iron pyrites." It also seems to me that the best way for one to find such friendship in others would be to give to others the best of one's self in a simple spirit of good-fellowship and human service — without thought of a "fifty-fifty" bargain.

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